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Spencer

Z O O N O M I A;
OR,
T H E L A W S
OF
O R G A N I C L I F E.

IN FOUR VOLUMES.

By ERASMUS DARWIN, M.D. F.R.S.

AUTHOR OF THE BOTANIC GARDEN.

Principiū cælum, ac terras, camposque liquentes,
Lucentemque globum lunæ, titaniaque astra,
Spiritus intus alit, totamque infusa per artus
Mens agitat molem, et magnū se corpore miscet.

VIRG. *Æn.* vi.

Earth, on whose lap a thousand nations tread,
And Ocean, brooding his prolific bed,
Night's changeful orb, blue pole, and silvery zones,
Where other worlds encircle other suns,
One mind inhabits, one diffusive Soul
Wields the large limbs, and mingles with the whole.

V O L. III.

THE THIRD EDITION, CORRECTED.

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Z O O N O M I A;
OR,
THE LAWS OF ORGANIC LIFE.
PART II.
CONTAINING
A CATALOGUE OF DISEASES,
DISTRIBUTED INTO
NATURAL CLASSES,
ACCORDING TO THEIR PROXIMATE CAUSES,
WITH THEIR SUBSEQUENT
ORDERS, GENERA, AND SPECIES,
AND WITH THEIR
METHODS OF CURE.

Hæc, ut potero, explicabo; nec tamen, quasi Pythius Apollo, certa ut
sint et fixa, quæ dixerò; sed ut Homunculus unus e multis probabiliora
conjecturâ sequens.

Cic. Tusc. Disr. I. 1. 9.



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P R E F A C E.

ALL diseases originate in the exuberance, deficiency, or retrograde action, of the faculties of the sensorium, as their proximate cause; and consist in the disordered motions of the fibres of the body, as the proximate effect of the exertions of those disordered faculties.

The sensorium possesses four distinct powers, or faculties, which are occasionally exerted, and produce all the motions of the fibrous parts of the body; these are the faculties of producing fibrous motions in consequence of irritation, which is excited by external bodies; in consequence of sensa-

tion which is excited by pleasure or pain; in consequence of volition which is excited by desire or aversion; and in consequence of association, which is excited by other fibrous motions. We are hence supplied with four natural classes of diseases derived from their proximate causes; which we shall term those of irritation, those of sensation, those of volition, and those of association.

In the subsequent classification of diseases I have not adhered to the methods of any of those who have preceded me; the principal of whom are the great names of Sauvages and Cullen; but have nevertheless availed myself, as much as I could, of their definitions and distinctions.

The essential characteristic of a disease consists in its proximate cause, as is well observed by doctor Cullen, in his *Nosologia Methodica*, T. ii. Prolegom. p. xxix. *Similitudo quidem morborum in similitudine causæ eorum proximæ, qualiscunque*

cunque fit, revera consistit. I have taken the proximate cause for the classic character. The characters of the orders are taken from the excess, or deficiency, or retrograde action, or other properties of the proximate cause. The genus is generally derived from the proximate effect. And the species generally from the locality of the disease in the system.

Many species in this system are termed genera in the systems of other writers; and the species of those writers are, in consequence, here termed varieties. Thus, in Dr. Cullen's Nosologia, the variola or small-pox is termed a genus, and the distinct and confluent kinds are termed species. But as the infection from the distinct kind frequently produces the confluent kind, and that of the confluent kind frequently produces the distinct; it would seem more analogous to botanical arrangement, which these nosologists profess to imitate, to call the distinct and confluent small-pox varieties

than species. Because the species of plants in botanical systems propagate others similar to themselves; which does not uniformly occur in such vegetable productions as are termed varieties.

In some other genera of nosologists the species have no analogy to each other, either in respect to their proximate cause, or to their proximate effect, though they may be somewhat similar in less essential properties; thus the thin and saline discharge from the nostrils on going into the cold air of a frosty morning, which is owing to the deficient action of the absorbent vessels of the nostrils, is one species; and the viscid mucus discharged from the secreting vessels of the same membrane, when inflamed, is another species of the same genus, Catarrhus. Which bear no analogy either in respect to their immediate cause, or to their immediate effect.

The uses of the method here offered to the public,

public, of classing diseases according to their proximate causes, are, first, more distinctly to understand their nature by comparing their essential properties. Secondly, to facilitate the knowledge of the methods of cure; since in natural classification of diseases the species of each genus, and indeed the genera of each order, a few perhaps excepted, require the same general medical treatment. And lastly, to discover the nature and the name of any disease previously unknown to the physician; which I am persuaded will be more readily and more certainly done by this natural system, than by the artificial classifications already published.

The common names of diseases are not well adapted to any kind of classification, and least of all to this, from their proximate causes. Some of their names in common language are taken from the remote cause, as worms, stone of the bladder; others from the remote effect, as diarrhœa, salivation, hydrocephalus; others from some accidental symptom of the disease, as tooth-ach,

ach, head-ach, heart-burn; in which the pain is only a concomitant circumstance of the excess or deficiency of fibrous actions, and not the cause of them. Others again are taken from the deformity occasioned in consequence of the unnatural fibrous motions, which constitute diseases, as tumours, eruptions, extenuations; all these therefore improperly give names to diseases; and some difficulty is thus occasioned to the reader in endeavouring to discover to what class such disorders belong.

Another difficulty attending the names of diseases is, that one name frequently includes more than one disease, either existing at the same time or in succession. Thus the pain of the bowels from worms is caused by the increased action of the membrane from the stimulus of those animals; but the convulsions, which sometimes succeed these pains in children, are caused by the consequent volition, and belong to another class.

To discover under what class any disease should be arranged, we must first investigate the proximate cause; thus the pain of the tooth-ach is not the cause of any diseased motions; but the effect; the tooth-ach therefore does not belong to the class of Sensation. As the pain is caused by increased or decreased action of the membranes of the tooth, and these actions are owing to the increase or decrease of irritation, the disease is to be placed in the class of Irritation.

To discover the order it must be inquired, whether the pain be owing to increased or defective motion of the pained membrane; which is known by the concomitant heat or coldness of the part. In tooth-ach without inflammation there is generally a coldness attends the cheek in its vicinity; as may be perceived by the hand of the patient himself, compared with the opposite cheek. Hence odontalgia is found to belong to the order of decreased irritation. The genus and species must

must be found by inspecting the synopsis of the second order of the class of Irritation. See Class I. 2. 4. 12.

This may be further elucidated by considering the natural operation of parturition; the pain is occasioned by the increased action or distention of the vessels of the uterus, in consequence of the stimulus of the fetus; and is therefore caused by increased irritation; but the actions of the abdominal muscles in its exclusion are caused by the pain, and belong to the class of increased sensation. See Class II. 1. 1. 12. Hence the difficulty of determining, under what class of diseases parturition should be arranged, consists in there being two kinds of diseased actions comprehended under one word; which have each their different proximate cause.

In Sect. XXXIX. 8. 4. and in Class II. 1. 1. 1. we have endeavoured to give names to four links
of

of animal causation, which conveniently apply to the classification of diseases ; thus in common nictitation, or winking with the eyes without our attention to it, the increased irritation is the proximate cause ; the stimulus of the air on the dry cornea is the remote cause ; the closing of the eyelid is the proximate effect ; and the diffusion of tears over the eyeball is the remote effect. In some cases two more links of causation may be introduced ; one of them may be termed the pre-remote cause ; as the warmth or motion of the atmosphere, which causes greater exhalation from the cornea. And the other the post-remote effect ; as the renewed pellucidity of the cornea ; and thus six links of causation may be expressed in words.

But if amid these remote links of animal causation any of the four powers or faculties of the sensorium be introduced, the reasoning is not just according to the method here proposed ; for these powers of the sensorium are always the proximate causes

causes of the contractions of animal fibres; and therefore in true language cannot be termed their remote causes. From this criterion it may always be determined, whether more diseases than one are comprehended under one name; a circumstance which has much impeded the investigation of the causes, and cures of diseases.

Thus the term fever, is generally given to a collection of morbid symptoms; which are indeed so many distinct diseases, that sometimes appear together, and sometimes separately; hence it has no determinate meaning, except it signifies simply a quick pulse, which continues for some hours; in which sense it is here used.

In naming diseases I have endeavoured to avoid the affectation of making new compound Greek words, where others equally expressive could be procured: as a short periphrasis is easier to be understood, and less burdensome to the memory.

In the *Methodus Medendi*, which is marked by M. M. at the end of many of the species of diseases, the words *incitantia*, *forbentia*, *torpentina*, &c. refer to the articles of the *Materia Medica*, explaining the operations of medicines.

The remote causes of many diseases, their periods, and many circumstances concerning them, are treated of in the preceding volumes; the descriptions of many of them, which I have omitted for the sake of brevity, may be seen in the *Nosologia Methodica* of Sauvages, and in the *Synopsis Nosologiæ* of Dr. Cullen, and in the authors to which they refer.

In this arduous undertaking the author solicits the candour of the critical reader; as he cannot but foresee, that many errors will be discovered, many additional species will require to be inserted; and others to be transplanted, or erased. If he could expend another forty years in the practice of
medicine,

medicine, he makes no doubt, but that he could bring this work nearer perfection, and thence render it more worthy the attention of philosophers. — As it is, he is induced to hope, that some advantages will be derived from it to the science of medicine, and consequent utility to the public, and leaves the completion of his plan to the industry of future generations.

DERBY, *Jan. 1, 1796.*

Z O O N O M I A.

P A R T II.

CLASSES OF DISEASES.

- I. DISEASES OF IRRITATION.
- II. DISEASES OF SENSATION.
- III. DISEASES OF VOLITION.
- IV. DISEASES OF ASSOCIATION.

*The Orders and Genera of the First Class of
Diseases.*

CLASS I.

DISEASES OF IRRITATION.

ORDO I.

Increased Irritation.

GENERA.

1. With increased actions of the sanguiferous system.
2. With increased actions of the secerning system.
3. With increased actions of the absorbent system.
4. With increased actions of other cavities and membranes.
5. With increased actions of the organs of sense.

ORDO II.

Decreased Irritation.

GENERA.

1. With decreased actions of the sanguiferous system.
2. With decreased actions of the secerning system.
3. With decreased actions of the absorbent system.
4. With decreased actions of other cavities and membranes.
5. With decreased actions of the organs of sense.

ORDO

ORDO III.

Retrograde Irritative Motions.

GENERA.

1. Of the alimentary canal.
2. Of the absorbent system.
3. Of the sanguiferous system.

*The Orders, Genera, and Species, of the First
Class of Diseases.*

CLASS I.

DISEASES OF IRRITATION.

ORDO I.

Increased Irritation.

GENUS I.

With increased Actions of the Sanguiferous System.

SPECIES.

- | | |
|--|-----------------------------|
| 1. <i>Febris irritativa.</i> | Irritative fever. |
| 2. <i>Ebrietas.</i> | Drunkennes. |
| 3. <i>Hæmorrhagia arteri-
osa.</i> | Arterial hæmorrhage. |
| 4. <i>Hæmoptoe arteriosa.</i> | Spitting of arterial blood. |
| 5. <i>Hæmorrhagia narium.</i> | Bleeding from the nose. |

GENUS II.

With increased Actions of the Secerning System.

SPECIES.

- | | |
|---------------------------|-------------------|
| 1. <i>Calor febrilis.</i> | Febrile heat. |
| 2. <i>Rubor febrilis.</i> | Febrile redness. |
| 3. <i>Sudor calidus.</i> | Warm sweat. |
| <i>Sudor febrilis.</i> | Sweat in fevers. |
| <i>—— a labore.</i> | —— from exercise. |

Sudor

- Sudor ab igne.* Sweat from fire.
 — *a medicamentis.* — from medicines.
4. *Urina uberius colorata.* Copious coloured urine.
 5. *Diarrhœa calida.* Warm diarrhœa.
 — *febrilis.* Diarrhœa from fever.
 — *crapulosa.* — from indigestion.
 — *infantum.* — of infants.
6. *Salivatio calida.* Warm salivation.
 7. *Catarrhus calidus.* — catarrh.
 8. *Expectoratio calida.* — expectoration.
 9. *Exsudatio pone aures.* Discharge behind the ears.
10. *Gonorrhœa calida.* Warm gonorrhœa.
 11. *Fluor albus calidus.* — fluor albus.
 12. *Hæmorrhœis alba.* White piles.
 13. *Serum e vesicatorio.* Discharge from a blister.
 14. *Perspiratio fœtida.* Fetid perspiration.
 15. *Crines novi.* New hairs.

GENUS III.

With increased Actions of the Absorbent System.

SPECIES.

1. *Lingua arida.* Dry tongue.
 2. *Fauces aridæ.* Dry throat.
 3. *Nares aridi.* Dry nostrils.
 4. *Expectoratio solida.* Solid expectoration.
 5. *Constipatio alvi.* Costiveness.
 6. *Cutis arida.* Dry skin.

- | | |
|---|---------------------------------|
| 7. <i>Urina parci^{or} colo-
rata.</i> | Diminished coloured u-
rine. |
| 8. <i>Calculus felleus et
i^cterus.</i> | Gall-stone and jaundice. |
| 9. ——— <i>renis.</i> | Stone of the kidney. |
| 10. ——— <i>vesicæ.</i> | Stone of the bladder. |
| 11. ——— <i>arthriticus.</i> | Gout-stone. |
| 12. <i>Rheumatismus chro-
nicus.</i> | Chronic rheumatism. |
| 13. <i>Cicatrix vulnerum.</i> | Healing of ulcers. |
| 14. <i>Corneæ obfuscatio.</i> | Scar on the cornea. |

GENUS IV.

*With increased Actions of other Cavities and Mem-
branes.*

SPECIES.

- | | |
|--|---------------------------------|
| 1. <i>Nictitatio irritati-
va.</i> | Irritative nictitation. |
| 2. <i>Deglutitio irritati-
va.</i> | Irritative deglutition. |
| 3. <i>Respiratio et tussis.</i> | Respiration and cough. |
| 4. <i>Exclusio bilis.</i> | Exclusion of the bile. |
| 5. <i>Dentitio.</i> | Toothing. |
| 6. <i>Priapismus.</i> | Priapism. |
| 7. <i>Distensio mammula-
rum.</i> | Distention of the nip-
ples. |
| 8. <i>Descensus uteri.</i> | Descent of the uterus. |
| 9. <i>Prolapsus ani.</i> | Descent of the rectum. |
| 10. <i>Lumbricus.</i> | Round worm. |

11. *Tænia*

- | | |
|-------------------------|---------------|
| 11. <i>Tænia.</i> | Tape-worm. |
| 12. <i>Ascarides.</i> | Thread-worms. |
| 13. <i>Dracunculus.</i> | Guinea-worm. |
| 14. <i>Morpiones.</i> | Crab-lice. |
| 15. <i>Pediculi.</i> | Lice. |

GENUS V.

With increased Actions of the Organs of Sense.

SPECIES.

- | | |
|----------------------------------|----------------------|
| 1. <i>Visus acrior.</i> | Acuter sight. |
| 2. <i>Auditus acrior.</i> | ———— hearing. |
| 3. <i>Olfaëtus acrior.</i> | ———— smell. |
| 4. <i>Gustus acrior.</i> | ———— taste. |
| 5. <i>Tactus acrior.</i> | ———— touch. |
| 6. <i>Sensus caloris acrior.</i> | ———— sense of heat. |
| 7. ——— extenſionis a- | ———— sense of exten- |
| <i>crior.</i> | ſion. |
| 8. <i>Titillatio.</i> | Tickling. |
| 9. <i>Pruritus.</i> | Itching. |
| 10. <i>Dolor urens.</i> | Smarting. |
| 11. <i>Conſternatio.</i> | Surprise. |

ORDO II.

Decreased Irritation.

GENUS I.

With decreased Actions of the Sanguiferous System.

SPECIES.

- | | |
|---------------------------------|---------------------|
| 1. <i>Febris inirritativa.</i> | Inirritative fever. |
| 2. <i>Pareſis inirritativa.</i> | ———— debility. |

- | | |
|--------------------------------|---------------------------|
| 3. <i>Somnus interruptus.</i> | Interrupted sleep. |
| 4. <i>Syncope.</i> | Fainting. |
| 5. <i>Hæmorrhagia venosa.</i> | Venous hæmorrhage. |
| 6. <i>Hæmorrhoids cruenta.</i> | Bleeding piles. |
| 7. <i>Hæmorrhagia renum.</i> | ———— from the kidneys. |
| 8. ————— <i>hepatitis.</i> | Bleeding from the liver. |
| 9. <i>Hæmoptoe venosa.</i> | Spitting of venous blood. |
| 10. <i>Palpitatio cordis.</i> | Palpitation of the heart. |
| 11. <i>Menorrhagia.</i> | Exuberant menstruation. |
| 12. <i>Dysmenorrhagia.</i> | Deficient menstruation. |
| 13. <i>Lochia nimia.</i> | Too great lochia. |
| 14. <i>Abortio spontanea.</i> | Spontaneous abortion. |
| 15. <i>Scorbutus.</i> | Scurvy. |
| 16. <i>Vibices.</i> | Extravasations of blood. |
| 17. <i>Petechiæ.</i> | Purple spots. |
| 18. <i>Aneurisma.</i> | Aneurism. |
| 19. <i>Varix.</i> | Swelling of veins. |

GENUS II.

With decreased Actions of the Secerning System.

SPECIES.

- | | |
|-----------------------------|---------------------|
| 1. <i>Frigus febrile.</i> | Coldness in fevers. |
| ——— <i>chronicum.</i> | ——— permanent. |
| 2. <i>Pallor fugitivus.</i> | Paleness fugitive. |
| ——— <i>permanens.</i> | ——— permanent. |
| 3. <i>Pus parcius.</i> | Diminished pus. |
| 4. <i>Mucus parcior.</i> | Diminished Mucus. |

- | | |
|----------------------------------|---------------------------|
| 5. <i>Urina parcior pallida.</i> | Pale diminished urine. |
| 6. <i>Torpor hepaticus.</i> | Torpor of the liver. |
| 7. <i>Torpor pancreatis.</i> | Torpor of the pancreas. |
| 8. <i>Torpor renis.</i> | Torpor of the kidney. |
| 9. <i>Punctæ mucosæ vultus.</i> | Mucous spots on the face. |
| 10. <i>Maculæ cutis fulvæ.</i> | Tawny blots on the skin. |
| 11. <i>Canities.</i> | Grey hairs. |
| 12. <i>Callus.</i> | Callus. |
| 13. <i>Cataracta.</i> | Cataract. |
| 14. <i>Innutritio ossium.</i> | Innutrition of the bones. |
| 15. <i>Rachitis.</i> | Rickets. |
| 16. <i>Spinæ distortio.</i> | Distortion of the spine. |
| 17. <i>Claudicatio coxaria.</i> | Lameness of the hip. |
| 18. <i>Spina protuberans.</i> | Protuberant spine. |
| 19. <i>Spina bifida.</i> | Divided spine. |
| 20. <i>Defectus palati.</i> | Defect of the palate. |

GENUS III.

With decreased Actions of the Absorbent System.

SPECIES.

- | | |
|-----------------------------------|-----------------------------|
| 1. <i>Mucus faucium frigidus.</i> | Cold mucus from the throat. |
| 2. <i>Sudor frigidus.</i> | — sweat. |
| 3. <i>Catarrhus frigidus.</i> | — catarrh. |
| 4. <i>Expectoratio frigidæ.</i> | — expectoration. |

5. *Urina*

- | | |
|---|--|
| 5. <i>Urina uberior pal-
lida.</i> | Copious pale urine. |
| 6. <i>Diarrhœa frigida.</i> | Cold diarrhœa. |
| 7. <i>Fluor albus frigidus.</i> | — fluor albus. |
| 8. <i>Gonorrhœa frigida.</i> | — gonorrhœa. |
| 9. <i>Hepatis tumor.</i> | Swelling of the liver. |
| 10. <i>Cblorosis.</i> | Green sickness. |
| 11. <i>Hydrocele.</i> | Dropsey of the vagina
testis. |
| 12. <i>Hydrocephalus inter-
nus.</i> | — of the brain. |
| 13. <i>Ascites.</i> | — of the belly. |
| 14. <i>Hydrothorax.</i> | — of the chest. |
| 15. <i>Hydrops ovarii.</i> | — of the ovary. |
| 16. <i>Anasarca pulmonum.</i> | — of the lungs. |
| 17. <i>Obesitas.</i> | Corpulency. |
| 18. <i>Splenis tumor.</i> | Swelling of the spleen. |
| 19. <i>Genu tumor albus.</i> | White swelling of the
knee. |
| 20. <i>Bronchocele.</i> | Swelled throat. |
| 21. <i>Scrofula.</i> | King's evil. |
| 22. <i>Scirrhus.</i> | Scirrhus. |
| 23. ——— <i>recti.</i> | — of the rectum. |
| 24. ——— <i>urethræ.</i> | — of the urethra. |
| 25. ——— <i>œsophagi.</i> | — of the throat. |
| 26. <i>Laeteorum inirrita-
bilitas.</i> | Inirritability of. the lac-
teals. |
| 27. <i>Lymphaticorum in-
irritabilitas.</i> | Inirritability of the lym-
phatics. |

GENUS

GENUS IV.

With decreased Actions of other Cavities and Membranes.

SPECIES.

- | | |
|--|--|
| 1. <i>Sitis calida.</i> | Thirst warm. |
| — <i>frigida.</i> | — cold. |
| 2. <i>Esuries.</i> | Hunger. |
| 3. <i>Nausea sicca.</i> | Dry nausea. |
| 4. <i>Ægritudo ventriculi.</i> | Sickness of stomach. |
| 5. <i>Cardialgia</i> | Heart-burn. |
| 6. <i>Arthritis ventriculi.</i> | Gout of the stomach. |
| 7. <i>Colica flatulenta.</i> | Flatulent colic. |
| 8. <i>Colica saturnina.</i> | Colic from lead. |
| 9. <i>Tympanitis.</i> | Tympany. |
| 10. <i>Hypochondriasis.</i> | Hypochondriacism. |
| 11. <i>Cephalæa idiopathica.</i> | Idiopathic head-ach. |
| 12. <i>Hemicrania idiopathica.</i> | Idiopathic hemicrania. |
| 13. <i>Odontalgia.</i> | Tooth-ach. |
| — <i>Otalgia.</i> | Ear-ach. |
| 14. <i>Pleurodyne chronica.</i> | Chronical pain of the side. |
| 15. <i>Sciatica frigida.</i> | Cold sciatica. |
| 16. <i>Lumbago frigida.</i> | — lumbago. |
| 17. <i>Hysteralgia frigida.</i> | — pain of the uterus. |
| 18. <i>Proctalgia frigida.</i> | — pain of the rectum. |
| 19. <i>Vesicæ felleæ inirritabilitas et icterus.</i> | Inirritability of the gall-bladder and jaundice. |

GENUS

GENUS V.

With decreased Actions of the Organs of Sense.

SPECIES.

- | | |
|------------------------------------|----------------------------|
| 1. <i>Stultitia inirritabilis.</i> | Folly from inirritability. |
| 2. <i>Visus imminutus.</i> | Impaired vision. |
| 3. <i>Muscae volitantes.</i> | Dark moving specks. |
| 4. <i>Strabismus.</i> | Squinting. |
| 5. <i>Amaurosis.</i> | Palsy of the optic nerve. |
| 6. <i>Auditus imminutus.</i> | Impaired hearing. |
| 7. <i>Olfactus imminutus.</i> | ——— smell. |
| 8. <i>Gustus imminutus.</i> | ——— taste. |
| 9. <i>Tactus imminutus.</i> | ——— touch. |
| 10. <i>Stupor.</i> | Stupor. |

ORDO III.

Retrograde Irritative Motions.

GENUS I.

Of the Alimentary Canal.

SPECIES.

- | | |
|------------------------------|-------------------------------|
| 1. <i>Ruminatio.</i> | Chewing the cud. |
| 2. <i>Ructus.</i> | Eruetation. |
| 3. <i>Apepsia.</i> | Indigestion, water-
qualm. |
| 4. <i>Vomitus.</i> | Vomiting. |
| 5. <i>Cholera.</i> | Cholera. |
| 6. <i>Ileus.</i> | Iliac passion. |
| 7. <i>Globus hystericus.</i> | Hysteric strangulation. |
| | 8. <i>Vomendi</i> |

- | | |
|----------------------------------|-------------------------|
| 8. <i>Vomendi conamen inane.</i> | Vain efforts to vomit. |
| 9. <i>Borborismus.</i> | Gurgling of the bowels. |
| 10. <i>Hysteria.</i> | Hysterical disease. |
| 11. <i>Hydrophobia.</i> | Dread of water. |

GENUS II.

Of the Absorbent System.

SPECIES.

- | | |
|----------------------------------|------------------------|
| 1. <i>Catarrhus lymphaticus.</i> | Lymphatic catarrh. |
| 2. <i>Salivatio lymphatica.</i> | Lymphatic salivation. |
| 3. <i>Nausea humida.</i> | Moist nausea. |
| 4. <i>Diarrhœa lymphatica.</i> | Lymphatic flux. |
| 5. <i>Diarrhœa chylifera.</i> | Flux of chyle. |
| 6. <i>Diabetes.</i> | Diabetes. |
| 7. <i>Sudor lymphaticus.</i> | Lymphatic sweat. |
| 8. <i>Sudor asthmaticus.</i> | Asthmatic sweat. |
| 9. <i>Translatio puris.</i> | Translation of matter. |
| 10. ——— <i>lactis.</i> | ———— of milk. |
| 11. ——— <i>urinae.</i> | ———— of urine. |

GENUS III.

Of the Sanguiferous System.

SPECIES.

- | | |
|---|---------------------------------------|
| 1. <i>Capillarium motus retrogressus.</i> | Retrograde motion of the capillaries. |
| 2. <i>Palpitatio cordis.</i> | Palpitation of the heart. |
| 3. <i>Anhelatio spasmodica.</i> | Spasmodic panting. |

CLASS

CLASS I.

DISEASES OF IRRITATION.

ORDO I.

Increased Irritation.

GENUS I.

With increased Actions of the Sanguiferous System.

THE irritability of the whole, or of part, of our system is perpetually changing; these vicissitudes of irritability and of inirritability are believed to depend on the accumulation or exhaustion of the sensorial power, as their proximate cause; and on the difference of the present stimulus, and of that which we had previously been accustomed to, as their remote cause. Thus a smaller degree of heat produces pain and inflammation in our hands, after they have been for a time immersed in snow; which is owing to the accumulation of sensorial power in the moving fibres of the cutaneous vessels during their previous quiescence, when they were benumbed with cold. And we feel ourselves cold in the usual temperature of the atmosphere on coming out of a warm room; which is owing to the exhaustion of sensorial power in the moving fibres of the vessels of the skin by their previous increased activity, into which they were excited by unusual heat.

Hence

Hence the cold fits of fever are the occasion of the succeeding hot ones; and the hot fits contribute to occasion in their turn the succeeding cold ones. And though the increase of stimulus, as of heat, exercise, or distention, will produce an increased action of the stimulated fibres; in the same manner as it is produced by the increased irritability which was occasioned by a previous defect of stimulus; yet as the excesses of irritation from the stimulus of external things are more easily avoided than the deficiencies of it; the diseases of this country, except those which are the consequences of drunkenness, or of immoderate exercise, more frequently begin with torpor than with orgasm; that is, with inactivity of some parts, or of the whole of the system, and consequent coldness, than with increased activity, and consequent heat.

If the hot fit be the consequence of the cold one, it may be asked if they are proportionate to each other: it is probable that they are, where no part is destroyed by the cold fit, as in mortification or death. But we have no measure to distinguish this, except the time of their duration; whereas the extent of the torpor over a greater or less part of the system, which occasions the cold fit; or of the exertion which occasions the hot one; as well as the degree of such torpor or exertion, are perhaps more material than the time of their duration. Besides this, some muscles are less liable

to accumulate sensorial power during their torpor, than others, as the locomotive muscles compared with the capillary arteries; on all which accounts a long cold fit may often be followed by a short hot one.

As the torpor, with which a fit of fever commences, is sometimes owing to defect of stimulus, as in going into the cold-bath; and sometimes to a previous exhaustion of the sensorial power by the action of some violent stimulus, as after coming out of a hot room into cold air; a longer time must elapse, before there can be a sufficient accumulation of sensorial power to produce a hot fit in one case than in the other. Because in the latter case the quantity of sensorial power previously expended must be supplied, before an accumulation can begin.

The cold paroxysm commences, when the torpor of a part becomes so great, and its motions in consequence so slow or feeble, as not to excite the sensorial power of association; which in health contributes to move the rest of the system, which is catenated with it. And the hot fit commences by the accumulation of the sensorial power of irritation of the part first affected, either so as to counteract its deficient stimulus, or its previous waste of sensorial power; and it becomes general by the accumulation of the sensorial power of association; which is excited by the renovated actions of the part first affected; or becomes so
great

great as to overbalance the deficient excitement of it. On all these accounts the hot fit cannot be supposed to bear any proportion to the cold one in length of time, though the latter may be the consequence of the former. See Suppl. I. 16. 8.

SPECIES.

1. *Febris irritativa*. Irritative fever. This is the synocha of some writers, it is attended with strong pulse without inflammation; and in this circumstance differs from the febris inirritativa of Class I. 2. 1. 1. which is attended with weak pulse without inflammation. The increased frequency of the pulsation of the heart and arteries constitutes fever; during the cold fit these pulsations are always weak, as the energy of action is then decreased throughout the whole system; and therefore the general arterial strength cannot be determined by the touch, till the cold part of the paroxysm ceases. This determination is sometimes attended with difficulty; as strong and weak are only comparative degrees of the greater or less resistance of the pulsation of the artery to the compression of the finger. But the greater or less frequency of the pulsations affords a collateral evidence in those cases, where the degree of strength is not very distinguishable, which may assist our judgment concerning it. Since a moderately strong pulse, when the patient is in a re-

cumbent posture, and not hurried in mind, seldom exceeds 120 strokes in a minute; whereas a weak one often exceeds 130 in a recumbent posture, and 150 in an erect one, in those fevers, which are termed nervous or putrid. See Sect. XII. 1. 4.

The increased frequency of the pulsation of the heart and arteries, as it is occasioned either by excess or defect of stimulus, or of sensorial power, exists both in the cold and hot fits of fever; but when the cold fit ceases, and the pulse becomes strong and full as well as quick, in consequence of the increased irritability of the heart and arteries, it constitutes the irritative fever, or synocha. It is attended with considerable heat during the paroxysm, and generally terminates in a quarter of a luration, without any disturbance of the faculties of the mind. See Class IV. 1. 1. 8.

M. M. Venesection. Emetics. Cathartics. Cool the patient in the hot fit, and warm him in the cold one. Rest. Torpentia.

2. *Ebrietas*. Drunkenness. By the stimulus of wine or opium the whole arterial system, as well as every other part of the moving system, is excited into increased action. All these secretions, and with them the production of sensorial power itself in the brain, seem to be for a time increased, with an additional quantity of heat, and of pleasurable sensation. See Sect. XXI. on this subject. This explains, why at the com-

mencement of the warm paroxysm of some fevers the patient is in greater spirits, or vivacity; because, as in drunkenness, the irritative motions are all increased, and a greater production of sensation is the consequence, which, when in a certain degree, is pleasurable, as in the diurnal fever of weak people. Sect. XXXVI. 3. 1.

3. *Hæmorrhagia arteriosa.* Arterial hæmorrhage. Bleeding with a quick, strong, and full pulse. The hæmorrhages from the lungs, and from the nose, are the most frequent of these; but it sometimes happens, that a small artery but half divided, or the puncture of a leech, will continue to bleed pertinaciously.

M. M. Venesection. Cathartic with calomel. Divide the wounded artery. Bind sponge on the puncture. If coffee or charcoal, internally? If air, with less oxygen?

4. *Hæmoptoe arteriosa.* Spitting of arterial blood. Blood spit up from the lungs is florid, because it has just been exposed to the influence of the air in its passage through the extremities of the pulmonary artery; it is frothy, from the admixture of air with it in the bronchia. The patients frequently vomit at the same time from the disagreeable titillation of blood about the fauces; and are thence liable to believe, that the blood is ejected from the stomach.

Sometimes an hæmoptoe for several successive days returns in gouty persons without danger, and seems to supply the place of the gouty paroxysms. Is not the liver always diseased previous to the hæmoptoe, as in several other hæmorrhages? See Class I. 2. 1. 9.

M. M. Venesection, a purge, a blister, diluents, torpentia; and afterwards forbentia, as the bark, the acid of vitriol, and opium. An emetic is said to stop a pulmonary hæmorrhage, which it may effect, as sickness decreases the circulation, as is very evident in the great sickness sometimes produced by too large a dose of digitalis purpurea.

Dr. Rush says, a table-spoonful or two of common salt is successful in hæmoptoe; this may be owing to its stimulating the absorbent systems, both the lymphatic, and the venous. Should the patient respire air with less oxygen? or be made sick by whirling round in a chair suspended by a rope? One immersion in cold water, or a sudden sprinkling all over with cold water, would probably stop a pulmonary hæmorrhage. See Sect. XXVII. 1.

5. *Hæmorrhagia narium. Epistaxis.* Bleeding at the nose in elderly subjects most frequently attends those, whose livers are enlarged or inflamed by the too frequent use of fermented liquors.

In boys it occurs perhaps simply from redundancy of blood; and in young girls sometimes precedes the approach of the catamenia; and then
it

it shews a disposition contrary to chlorosis ; which arises from a deficiency of red blood.

M. M. It is stopped by plunging the head into cold water, with powdered salt hastily dissolved in it ; or sometimes by lint strewed over with wheat flower put up the nostrils ; or by a solution of steel in brandy applied to the vessel by means of lint. The cure in other respects as in hæmoptoe ; when the bleeding recurs at certain periods, after venesection, and evacuation by calomel, and a blister, the bark and steel must be given, as in intermittent fevers. See Section XXVII. 1.

The tincture of digitalis given in proper quantities, as 30 drops from a two-ounce phial every six hours for two or three or four doses, is probably an efficacious medicine. See Dr. Ferriar's Treatise on Digitalis. He stopped active hæmorrhages by the exhibition of digitalis.

ORDO I.

Increased Irritation.

GENUS II.

With increased Actions of the Secerning System.

THESE are always attended with increase of partial or of general heat; for the secreted fluids are not simply separated from the blood, but are new combinations; as they did not previously exist as such in the blood vessels. But all new combinations give out heat chemically; hence the origin of animal heat, which is always increased in proportion to the secretion of the part affected, or to the general quantity of the secretions. Nevertheless there is reason to believe, that as we have a sense purposely to distinguish the presence of greater or less quantities of heat, as mentioned in Sect. XIV. 6. so we may have certain minute glands for the secretion of this fluid, as the brain is believed to secrete the sensorial power, which would more easily account for the instantaneous production of the blush of shame, and of anger. This subject deserves further investigation.

SPECIES.

1. *Calor febrilis.* The heat in fevers arises from the increase of some secretion, either of the
natural

natural fluids, as in irritative fevers; or of new fluids, as in infectious fevers; or of new vessels, as in inflammatory fevers. The pain of heat is a consequence of the increased extension or contraction of the fibres exposed to so great a stimulus. See Class I. 1. 5. 6.

2. *Rubor febrilis*. Febrile redness. When the cold fit of fever terminates, and the pulsations of the heart and arteries become strong as well as quick from the increase of their irritability after their late quiescence, the blood is impelled forwards into the fine extremities of the arteries, and the anastomosing capillaries, quicker than the extremities of the veins can absorb and return it to the heart. Hence the pulse at the wrist becomes full, as well as quick and strong, and the skin glows with arterial blood, and the veins become empty and less visible.

In elderly people the force of the heart and arteries becomes less, while the absorbent power of the veins remains the same; whence the capillary vessels part with the blood, as soon as it is received, and the skin in consequence becomes paler; it is also probable, that in more advanced life some of the finer branches of the arteries coalesce, and become impervious, and thus add to the opacity of the skin.

3. *Sudor calidus*. Warm sweat may be divided
C 4 into

into four varieties, according to its remote causes. *First*, the perspirable matter is secreted in as great quantity during the hot fit of fever, as towards the end of it, when the sweat is seen upon the skin. But during the hot fit the cutaneous absorbents act also with increased energy, and the exhalation is likewise increased by the greater heat of the skin; and hence it does not appear in drops on the surface, but is in part re-absorbed, and in part dissipated in the atmosphere. But as the mouths of the cutaneous absorbents are exposed to the cool air or bedclothes; whilst those of the capillary glands, which secrete the perspirable matter, are exposed to the warmth of the circulating blood; the former, as soon as the fever-fit begins to decline, lose their increased action first; and hence the absorption of the sweat is diminished, whilst the increased secretion of it continues for some hours afterwards, which occasions it to stand in drops upon the skin.

As the skin becomes cooler, the evaporation of the perspirable matter becomes less, as well as the absorption of it. And hence the dissipation of aqueous fluid from the body, and the consequent thirst, are perhaps greater during the hot fit, than during the subsequent sweat. For the sweats do not occur, according to Dr. Alexander's experiments, till the skin is cooled from 112 to 108 degrees of heat; that is, till the paroxysm begins to decline. From this it appears, that the sweats

sweats are not critical to the hot fit, any more than the hot fit can be called critical to the cold one; but simply, that they are the natural consequence of the decline of the hot fit, commencing with the decreased action of the absorbent system, and the decreased evaporation from the skin. And from hence it may be concluded, that a fever-fit is not in general an effort of nature to restore health, as Sydenham considered it, but a necessary consequence of the previous torpor; and that the causes of fevers would be less detrimental, if the fever itself could be prevented from existing; as appears in the cool treatment of the small-pox.

It must be noted that the profuse sweats on the skin are more frequent at the decline of fever-fits than the copious urine, or loose stools, which are mentioned below; as the cutaneous absorbents, being exposed to the cool air, lose their increased action sooner than the urinary or intestinal absorbents; which open into the warm cavities of the bladder and intestines; but which are nevertheless often affected by their sympathy with the cutaneous absorbents. Hence few fevers terminate without a moisture of the skin; whence arose the fatal practice of forcing sweats by the external warmth of air or bed-clothes in fevers; for external warmth increases the action of the cutaneous capillaries more than that of the other discerning vessels; because the latter are habituated to 98 degrees of heat, the internal warmth of the body;

whereas the cutaneous capillaries being nearer the surface are habitually kept cooler by the contact of the external air. Sweats thus produced by heat in confined rooms are still more detrimental; as the air becomes then not only deprived of a part of its oxygene by frequent respiration, but is loaded with animal effluvia as well as with moisture, till it can receive no more; and in consequence, while the cutaneous secretion stands upon the skin in drops for want of exhalation, the lungs are exposed to an insalubrious atmosphere.

I do not deny, that sweating may be so managed as to be serviceable in preventing the return of the cold paroxysm of fevers; like the warm bath, or any other permanent stimulus, as wine, or opium, or the bark. For this purpose it should be continued till past the time of the expected cold fit, supported by moderate doses of wine-whey, with spirit of hartshorn, and moderate degrees of warmth. Its salutary effect, when thus managed, was probably one cause of its having been so much attended to; and the fetid smell, which when profuse is liable to accompany it, gave occasion to the belief, that the supposed material cause of the disease was thus eliminated from the circulation.

When too great external heat is applied, the system is weakened by excess of action, and the torpor which causes the cold paroxysm recurs sooner and more violently. For though some
stimuli,

stimuli, as of opium and alcohol, at the same time that they exhaust the sensorial power by promoting increase of fibrous action, may also increase the production or secretion of it in the brain, yet experience teaches us, that the exhaustion far out-balances the increased production, as is evinced by the general debility, which succeeds intoxication.

In respect to the fetor attending copious continued sweats, it is owing to the animalized part of this fluid being kept in that degree of warmth, which most favours putrefaction, and not suffered to exhale into the atmosphere. Broth, or other animal mucus, kept in similar circumstances, would in the same time acquire a putrid smell; yet has this error frequently produced miliarial eruptions, and increased every kind of inflammatory or sensitive fever.

The ease, which the patient experiences during sweating, if it be not produced by much external heat, is similar to that of the warm bath; which by its stimulus applied to the cutaneous vessels, which are generally cooler than the internal parts of the system, excites them into greater action; and pleasurable sensation is the consequence of these increased actions of the vessels of the skin: From considering all these circumstances, it appears that it is not the evacuation by sweats, but the continued stimulus, which causes and supports those sweats, which is serviceable in preventing

preventing the returns of fever-fits. And that sweats too long continued, or induced by too great stimulus of warmth, clothes, or medicines, greatly injure the patient by increasing inflammation, or by exhausting the sensorial power. See Class I. 1. 2. 14.

Secondly, The sweats produced by exercise or labour are of the warm kind; as they originate from the increased action of the capillaries of the skin, owing to their being more powerfully stimulated by the greater velocity of the blood, and by a greater quantity of it passing through them in a given time. For the blood during violent exercise is carried forwards by the action of the muscles faster in the arteries, than it can be taken up by the veins; as appears by the redness of the skin. And from the consequent sweats, it is evinced, that the secretory vessels of the skin during exercise pour out the perspirable matter faster, than the mouths of the absorbent vessels can drink it up. Which mouths are not exposed to the increased muscular action, or to the stimulus of the increased velocity and quantity of the blood, but to the cool air.

Thirdly, the increased secretion of perspirable matter occasioned by the stimulus of external heat belongs likewise to this place; as it is caused by the increased motions of the capillary vessels; which thus separate from the blood more perspirable matter, than the mouths of their correspondent absorbent vessels can take up; though
these

these also are stimulated by external heat into more energetic action. If the air be stationary, as in a small room, or bed with closed curtains, the sweat stands in drops on the skin for want of a quicker exhalation proportioned to the quicker secretion.

A *fourth* variety of warm perspiration is that occasioned by stimulating drugs, of which opium and alcohol are the most powerful; and next to these the spices, volatile alkali, and neutral salts, especially sea salt; that much of the aqueous part of the blood is dissipated by the use of these drugs, is evinced by the great thirst, which occurs a few hours after the use of them. See Art. III. 2. 1.

We may from hence understand, that the increase of this secretion of perspirable matter by artificial means, must be followed by debility and emaciation. When this is done by taking much salt, or salted meat, the sea-scurvy is produced; which consists in the inirritability of the bibulous terminations of the veins arising from the capillaries; see Class I. 2. 1. 14. The scrofula, or inirritability of the lymphatic glands, seems also to be occasionally induced by an excess in eating salt added to food of bad nourishment. See Class I. 2. 3. 21. If an excess of perspiration is induced by warm or stimulant clothing, as by wearing flannel in contact with the skin in the summer months, a perpetual febricula is excited, both by the preventing the access of cool air to the skin, and by perpetually
goadi

goads it by the numerous and hard points of the ends of the wool; which when applied to the tender skins of young children, frequently produce the red gum, as it is called; and in grown people, either an erysipelas, or a miliary eruption, attended with fever. See Class II. 1. 3. 12.

Shirts made of cotton or calico stimulate the skin too much by the points of the fibres, though less than flannel; whence cotton handkerchiefs make the nose sore by frequent use. The fibres of cotton are, I suppose, ten times shorter than those of flax, and the number of points in consequence twenty times the number; and though the manufacturers singe their calicoes on a red-hot iron cylinder, yet I have more than once seen an erysipelas induced or increased by the stimulus of calico, as well as of flannel; and have during the last summer prevailed on two, who were confined to their beds by fevers, and three, who were in a state of great debility, to disencumber themselves of the flannel shirts, which they had worn for some time; all of them became immediately and considerably relieved; and found no inconvenience afterwards by discontinuing an unnecessary stimulus, which had nothing to recommend it to those patients but the frivolous fashion of the day.

The inconvenience, which weak constitutions experience from wearing flannel shirts, arises from this circumstance; that the extremities of their limbs are more liable to become cold, than the surface

face of the chest and abdomen, and that hence they should in preference wear warmer stockings, shoes, and socks, or gloves. By stimulating the warmer parts of the skin into too strong and useless exertion, as by the hard points of a flannel shirt at all seasons, and by its confining the warmth of the skin too much in the summer months, a part of the sensorial power becomes unnecessarily expended; and in weak constitutions, where there is none to spare, some other parts of the system must act with less energy; and thus I believe the extremities of feeble people become colder by the use of a flannel shirt; in stronger people, and perhaps in warmer climates, this increased coldness of the extremities may not be perceptible; as stronger persons can better bear some increased exertion, and the consequent unnecessary loss of some sensorial power; and in warmer climates the extremities may not be so liable to become cold.

Analogous to this I remember to have seen an inoculated child about six years old, whose bosom and face, at the beginning of the eruptive fever, were of a fiery red colour, and exceedingly hot to the touch; and whose feet were at the same time pale, and cold to the touch. When on exposing the bosom and face to colder air with the feet only slightly covered, the colour of the former in a few minutes became nearly natural, with little excess of tangible heat, and at the same time the feet became as warm as natural.

Whence

Whence I conclude, that all unnecessary increase of stimuli, as of warm clothing, wine, and opium, is more injurious to feeble constitutions than to robust ones; and that such stimuli alone are salutary to weak persons, as increase those actions of the system, which are immediately necessary to life and health, as the class of medicines termed *forbentia*, as peruvian bark, and other bitters, and very small quantities of steel, as these seem to increase the activity of the absorbent system, both of the lymphatic and venous ones, and thus supply more nutrition, with all its salutary consequences. And that the use of these *forbentia*, as well as of the occasional use of warmer clothing, wine, and opium, should be discontinued, as soon as the system can acquire the natural habit of acting with sufficient energy without them. See Article II. 2. 2. 1. of the *Materia Medica*.

The increase of perspiration by heat either of clothes, or of fire, contributes much to emaciate the body; as is well known to jockeys, who, when they are a stone or two too heavy for riding, find the quickest way to lessen their weight is by sweating themselves between blankets in a warm room; but this likewise is a practice by no means to be recommended, as it weakens the system by the excess of so general a stimulus, brings on a premature old age, and shortens the span of life; as may be further deduced from the quick maturity, and
shortness

shortness of the lives, of the inhabitants of Hindostan, and other tropical climates.

When the heat of the body in weak patients in fevers is increased by the stimulus of the points of flannel, a greater consequent debility succeeds, than when it is produced by the warmth of fire; as in the former the heat is in part owing to the increased activity of the skin, and consequent expenditure of sensorial power; whereas in the latter case it is in part owing to the influx of the fluid matter of heat.

So the warmth produced by equitation, or by rubbing the body and limbs with a smooth brush or hand, as is done after bathing in some parts of the East, does not expend nearly so much sensorial power, as when the warmth is produced by the locomotion of the whole weight of the body by muscular action, as in walking, or running, or swimming. Whence the warmth of a fire is to be preferred to flannel shirts for weak people, and the agitation of a horse to exercise on foot. And I suppose those, who are unfortunately lost in snow, who are on foot, are liable to perish sooner by being exhausted by their muscular exertions; and might frequently preserve themselves by lying on the ground, and covering themselves with snow, before they were too much exhausted by fatigue. See Botan. Garden, Vol. II. the note on Barometz.

M. Buffon made a curious experiment to shew this circumstance. He took a numerous brood of

the butterflies of silkworms, some hundreds of which left their eggs on the same day and hour; these he divided into two parcels; and placing one parcel in the south window, and the other in the north window of his house, he observed, that those in the colder situation lived many days longer than those in the warmer one. From these observations it appears, that the wearing of flannel clothing next the skin, which is now so much in fashion, however useful it may be in the winter to those, who have cold extremities, bad digestions, or habitual coughs, must greatly debilitate them, if worn in the warm months, producing fevers, eruptions, and premature old age. See Sect. XXXVII. 5. Class I. 1. 2. 14. Art. III. 2. 1.

4. *Urina uberior colorata.* Copious coloured urine. Towards the end of fever-fits a large quantity of high coloured urine is voided, the kidneys continuing to act strongly, after the increased action of the absorbents of the bladder is somewhat diminished. If the absorbents continue also to act strongly, the urine is higher coloured, and so loaded as to deposit, when cool, an earthy sediment, erroneously thought to be the material cause of the disease; but is simply owing to the secretion of the kidneys being great from their increased action; and the thinner parts of it being absorbed by the increased action of the lymphatics, which are spread very thick on the neck of the bladder; for the
urine,

urine, as well as perhaps all the other secreted fluids, is produced from the kidneys in a very dilute state; as appears in those, who from the stimulus of a stone, or other cause, evacuate their urine too frequently; which is then pale from its not having remained in the bladder long enough for the more aqueous part to have been re-absorbed. The general use of this urinary absorption to the animal œconomy is evinced from the urinary bladders of fish, which would otherwise be unnecessary. High coloured urine in large quantity shews only, that the secreting vessels of the kidneys, and the absorbents of the bladder, have acted with greater energy. When there is much earthy sediment, it shews, that the absorbents have acted proportionally stronger, and have consequently left the urine in a less dilute state. In this urine the transparent sediment or cloud is mucous; the opake sediment is probably coagulable lymph from the blood changed by an animal or chemical process. The floating scum is oil. The angular concretions to the sides of the pot, formed as the urine cools, is microcosmic salt. Does the adhesive blue matter on the sides of the glass, or the blue circle on it at the edge of the upper surface of the urine, consist of Prussian blue?

5. *Diarrhœa calida.* Warm diarrhœa. This species may be divided into three varieties, deduced from their remote causes, under the names of diarrhœa febrilis, diarrhœa crapulosa, and diarrhœa

infantum. The febrile diarrhœa appears at the end of fever-fits, and is erroneously called critical, like the copious urine, and the sweats; whereas it arises from the increased action of those fecerning organs, which pour their fluids into the intestinal canal (as the liver, pancreas, and mucous glands,) continuing longer than the increased action of the intestinal absorbents. In this diarrhœa there is no appearance of curdled chyle in the stools, as occurs in cholera. I. 3. 1. 5.

The *diarrhœa crapulosa*, or diarrhœa from indigestion, occurs when too great a quantity of food or liquid has been taken; which not being completely digested, stimulates the intestines like any other extraneous acrid material; and thus produces an increase of the secretions into them of mucus, pancreatic juice, and bile. When the contents of the bowels are still more stimulant, as when drastic purges, or very putrescent diet, have been taken, a cholera is induced. See Sect. XXIX. 4.

The *diarrhœa infantum*, or diarrhœa of infants, is generally owing to too great acidity in their bowels. Milk is found curdled in the stomachs of all animals, old as well as young, and even of carnivorous ones, as of nawks. (Spallanzani.) And it is the gastric juice of the calf, which is employed to curdle milk in the process of making cheese. Milk is the natural food for children, and must curdle in their stomachs previous to digestion; and

as this curdling of the milk destroys a part of the acid juices of the stomach, there is no reason for discontinuing the use of it, though it is occasionally ejected in a curdled state. A child of a week old, which had been taken from the breast of its dying mother, and had by some uncommon error been suffered to take no food but water-gruel, became sick and griped in twenty-four hours, and was convulsed on the second day, and died on the third! When all young quadrupeds, as well as children, have this natural food of milk prepared for them, the analogy is so strong in favour of its salubrity, that a person should have powerful testimony indeed of its disagreeing, before he advises the discontinuance of the use of it to young children in health, and much more so in sickness. The farmers lose many of their calves, which are brought up by gruel, or gruel and old milk; and among the poor children of Derby, who are thus fed, hundreds are starved into the scrofula, and either perish, or live in a state of wretched debility.

When young children are brought up without a breast, they should for the first two months have no food but new milk; since the addition of any kind of bread or flour is liable to ferment, and produce too much acidity; as appears by the consequent diarrhœa with green dejections and gripes; the colour is owing to a mixture of acid with the natural quantity of bile, and the pain to its stimulus. And they should never be fed as they lie upon their

backs, as in that posture they are necessitated to swallow all that is put into their mouths; but when they are fed, as they are sitting up, or raised up, when they have had enough, they can permit the rest to run out of their mouths. This circumstance is of great importance to the health of those children, who are reared by the spoon, since if too much food is given them, indigestion, and gripes, and diarrhœa, are the consequence; and if too little, they become emaciated; and of this exact quantity their own palates judge the best.

M. M. In this last case of the diarrhœa of children, the food should be new milk, which by curdling destroys part of the acid, which coagulates it. Chalk about four grains every six hours, with one drop of spirit of hartshorn, and half a drop of laudanum. But a blister about the size of a shilling is of the greatest service by restoring the power of digestion. See Article III. 2. 1. in the *Materia Medica*.

6. *Salivatio calida*. Warm salivation. Increased secretion of saliva. This may be effected either by stimulating the mouth of the gland by mercury taken internally; or by stimulating the excretory duct of the gland by pyrethrum, or tobacco; or simply by the movement of the muscles, which lie over the gland, as in masticating any tasteless substance, as a lock of wool, or mastic.

In about the middle of nervous fevers a great
spitting

spitting of saliva sometimes occurs, which has been thought critical; but as it continues sometimes two or even three weeks without the relief of the patient, it may be concluded to arise from some accidental circumstance, perhaps not unfamiliar to the hysteric ptyalisms mentioned in Class I. 3. 2. 2. See Sect. XXIV.

M. M. Cool air, diluents, warm bath, evacuations.

7. *Catarrhus calidus*. Warm catarrh. Consists in an increased secretion of mucus from the nostrils without inflammation. This disease, which is called a cold in the head, is frequently produced by cold air acting for some time on the membranes, which line the nostrils, as it passes to the lungs in respiration. Whence a torpor of the action of the mucous glands is first introduced, as in Class I. 2. 3. 3. and an orgasm or increased action succeeds in consequence. Afterwards this orgasm and torpor are liable to alternate with each other for some time like the cold and hot fits of ague, attended with deficient or exuberant secretion of mucus in the nostrils.

At other times it arises from reverse sympathy with some extensive parts of the skin, which have been exposed too long to cold, as of the head, or feet. In consequence of the torpor of these cutaneous capillaries those of the mucous mem-

brane of the nostrils act with greater energy by reverse sympathy; and thence secrete more mucus from the blood. At the same time the absorbents, acting also with greater energy by their reverse sympathy with those of some distant part of the skin, absorb the thinner parts of the mucus more hastily; whence the mucus is both thicker and in greater quantity. Other curious circumstances attend this disease; the membrane becomes at times so thickened by its increased action in secreting the mucus, that the patient cannot breathe through his nostrils. In this situation if he warms his whole skin suddenly by fire or bed-clothes, or by drinking warm tea, the increased action of the membrane ceases by its reverse sympathy with the skin; or by the retraction of the sensorial power to other parts of the system; and the patient can breathe again through the nostrils. The same sometimes occurs for a time on going into the cold air by the deduction of heat from the mucous membrane, and its consequent inactivity or torpor. Similar to this when the face and breast have been very hot and red, previous to the eruption of the small-pox by inoculation, and that even when exposed to cool air, I have observed the feet have been cold; till on covering them with warm flannel, as the feet have become warm, the face has cooled. See Sect. XXXV.

1. 3. Class II. 1. 3. 5. IV. 2. 2. 10. IV. 1. 1. 5.

M. M. Eva-

M. M. Evacuations, abstinence, oil externally on the nose, warm diluent fluids, warm shoes, warm night-cap.

8. *Expectoratio calida.* Warm expectoration consists of the increased secretion of mucus from the membrane, which lines the bronchiæ, or air-cells of the lungs, without inflammation. This increased mucus is ejected by the action of coughing, and is called a cold, and resembles the catarrh of the preceding article; with which it is frequently combined.

M. M. Inhaling the steam of warm water, evacuations, warm bath, afterwards opium, forbentia,

9. *Exsudatio pone aures.* A discharge behind the ears. This chiefly affects children, and is a morbid secretion; as appears from its fetor; for if it was owing to defect of absorption, it would be saline, and not fetid; if a morbid action has continued a considerable time, it should not be stopped too suddenly; since in that case some other morbid action is liable to succeed in its stead. Thus children are believed to have had colics, or even convulsions, consequent to the too sudden healing of these morbid effusions behind their ears. The rationale of this is to be explained from a medical fact, which I have frequently observed; and that is, that a blister on the back greatly strengthens the power of digestion, and removes

the heart-burn in adults, and green stools in children. The stimulus of the blister produces sensation in the vessels of the skin; with this additional sensorial power these vessels act more strongly; and with these the vessels of the internal membranes of the stomach and bowels act with greater energy from their direct sympathy with them. Now the acrid discharge behind the ears of children produces sensation on that part of the skin, and so far acts as a small blister. When this is suddenly stopped, a debility of the digestive power of the stomach succeeds from the want of this accustomed stimulus, with flatulency, green stools, gripes, and sometimes consequent convulsions. See Class II. 1. 5. 6. and II. 1. 4. 6.

M. M. If the matter be absorbed, and produce swelling of the lymphatics of the neck, it should be cured as soon as possible by dusting the part with white lead, cerussa, in very fine powder; and to prevent any ill consequence an issue should be kept for about a month in the arm; or a purgative medicine should be taken every other day for three or four times, which should consist of a grain of calomel, and three or four grains of rhubarb, and as much chalk. If there be no appearance of absorption, it is better only to keep the parts clean by washing them with warm water morning and evening; or putting fuller's earth on them; especially till the time of toothling is past. The tinea, or scald head, and a
leprous

leprous eruption, which often appears behind the ears, are different diseases.

10. *Gonorrhœa calida*. Warm gleet. Increased discharge of mucus from the urethra or prostate gland without venereal desire, or venereal infection. See Class I. 2. 3. 8.

M. M. Cantharides, balsams, rhubarb, blister on perinæum, cold bath, injections of metallic salts, flannel shirt, change of the form of the accustomed chair or saddle of the patient.

11. *Fluor albus calidus*. Warm fluor albus. Increased secretion of mucus in the vagina or uterus without venereal desire or venereal infection. It is distinguished from the fluor albus frigidus by the increased sense of warmth in the part, and by the greater opacity or spissitude of the material discharged; as the thinner parts are re-absorbed by the increased action of the absorbents, along with the saline part, whence no smarting or excoriation attends it.

M. M. Mucilage, as isinglass, hartshorn jelly, gum arabic. Ten grains of rhubarb every night. Callico or flannel shift, opium, balsams. See Class I. 2. 3. 7.

12. *Hæmorrhœis alba*. White piles. An increased discharge of mucus from the rectum frequently mistaken for matter; is said to continue

nue a few weeks, and recur like the bleeding piles; and to obey lunar influence. See Class I. 2. 1. 6.

M. M. Abstinence from vinous spirit. Balsam of copaiva. Spice swallowed in large fragments, as ten or fifteen black pepper-corns cut in half, and taken after dinner and supper. Ward's paste, consisting of black pepper and the powdered root of *Helenium Enula*.

13. *Serum e vesicatorio*. Discharge from a blister. The excretory ducts of glands terminate in membranes, and are endued with great irritability, and many of them with sensibility; the latter perhaps in consequence of their facility of being excitable into great action; instances of this are the terminations of the gall-duct in the duodenum, and of the salivary and lachrymal glands in the mouth and eye; which produce a greater secretion of their adapted fluids, when the ends of their excretory ducts are stimulated.

The external skin consists of the excretory ducts of the capillaries, with the mouths of the absorbents; when these are stimulated by the application of cantharides, or by a slice of the fresh root of *bryonia alba* bound on it, the capillary glands pour an increased quantity of fluid upon the skin by their increased action; and the absorbent vessels imbibe a greater quantity of the more fluid and saline part of it; whence a thick mucous

or

or ferous fluid is deposited between the skin and cuticle.

14. *Perspiratio fœtida*. Fetid perspiration. The uses of the perspirable matter are to keep the skin soft and pliant, for the purposes of its easier flexibility during the activity of our limbs in locomotion, and for the preservation of the accuracy of the sense of touch, which is diffused under the whole surface of it to guard us against the injuries of external bodies; in the same manner as the secretion of tears is designed to preserve the cornea of the eye moist, and in consequence transparent; yet has this cutaneous mucus been believed by many to be an excrement; and I know not how many fanciful theories have been built on its supposed obstruction. Such as the origin of catarrhs, coughs, inflammations, erysipelas, and herpes.

To all these it may be sufficient to answer, that the ancient Grecians oiled themselves all over; that some nations have painted themselves all over, as the Picts of this island; that the Hot-tentots smear themselves all over with grease. And lastly, that many of our own heads at this day are covered with the flour of wheat and the fat of hogs, according to the tyranny of a filthy and wasteful fashion, and all this without inconvenience. To this must be added the strict analogy between the use of the perspirable matter
and

and the mucous fluids, which are poured for similar purposes upon all the internal membranes of the body; and besides its being in its natural state inodorous; which is not so with the other excretions of feces, or of urine.

The quantity of perspirable matter being greater than that of the excrementitious matters voided by stool and urine, has been used as an argument in favour of its being an excrement; the force of which I do not see: but can readily understand, that there must of necessity be a great exhalation of a fluid, which is diffused over the whole external surface of the warm skin, and perhaps warmer lungs, for the purpose of keeping them moist and pliant, and which is perpetually renewed as it evaporates; but, if it be conceived to be an excrement, there seems to have been no necessity for its quantity being so great.

The evaporation of this great quantity of fluid, secreted on the surface of the skin and lungs, must carry off much heat from the body; and as both this secretion and consequent evaporation will be in proportion to the activity of the cutaneous vessels, and the heat occasioned by their increased secretion, it would seem, that this evaporation of perspirable matter is the cause which preserves the animal body at the uniform degree of heat of 98; in the same manner as the evaporation of boiling water preserves it at 212 degrees of Fahrenheit's scale.

The

The peculiar use of the perspirable matter in preserving the membranes moist, which line the air-pipes of the lungs, appears from the curious discovery of Dr. Priestley, that the oxygen of the atmosphere will pass through moist animal membranes, but not through dry ones, so that if the membranes of the trachea were to become dry, the animal must as immediately perish as if he was to breathe azotic gas alone. See Sect. XXVIII. 2. of the preceding volume.

In some constitutions the perspirable matter of the lungs acquires a disagreeable odour; in others the axilla, and in others the feet, emit disgusting effluvia; like the secretions of those glands, which have been called odoriferæ; as those, which contain the castor in the beaver, and those within the rectum of dogs, the mucus of which has been supposed to guard them against the great costiveness, which they are liable to in hot summers; and which has been thought to occasion canine madness, but which, like their white excrement, is more probably owing to the deficient secretion of bile. Whether these odoriferous particles attend the perspirable matter in consequence of the increased action of the capillary glands, and properly be called excrementitious; that is, whether any thing is eliminated, which could be hurtful if retained; or whether they may only contain some of the essential oil of the animal; like the smell, which adheres to one's hand on stroking the hides
of

of some dogs; or like the effluvia, which is left upon the ground, from the feet of men and other creatures; and is perceptible by the nicer organs of the dogs, which hunt them, may admit of doubt.

Add to this, that some parts of the skin are liable to more profuse perspiration than other parts without possessing any fetid scent, as the skin of the face, on any more violent exercise. This seems to have been observed very early in the history of mankind, as it was said, that our first parents should earn their bread by the sweat of their brow. Why this circumstance does not attend other animals is a curious inquiry. Mankind soon learned to cover their bodies, except their faces, with clothes; when the face, by being more frequently exposed to greater variations of heat and cold, acquired greater irritability, or sensibility, or associability, and thus has become more excitable into greater action by the stimulus of exercise, or by that of food, or by the variolous infection, than other parts of the skin, as spoken of in Class IV. 1. 2. 12; which also appears by its sympathy with diseases of the liver or stomach by sensitive associations, as in the gutta rosea. From all these analogous facts the profuse sweat, which exudes from the face on exercise, does not appear to be an excrementitious fluid, but simply the consequence of more violent action of the cutaneous or perspirative glands.

M. M. Wash

M. M. Wash the parts twice a day with soap and water; with lime water; cover the feet with oiled silk socks, which must be washed night and morning. Cover them with charcoal recently made red hot, and beaten into fine powder and sifted, as soon as cold, and kept well corked in a bottle, to be washed off and renewed twice a day. Internally rhubarb grains vi. or viii. every night, so as to procure a stool or two extraordinary every day, and thus by increasing one evacuation to decrease another. Cool dress, diluting liquids?

15. *Crines novi*. New hairs. The black points on the faces of some people consist of mucus, which is become viscid, and which adheres in the excretory ducts of the glands of the skin; as described in Class I. 2. 2. 9. and which may be pressed out by the fingers, and resembles little worms. Similar to this would seem the fabrication of silk and of cobweb, by the silk-worm and spider; which is a secreted matter pressed through holes, which are the excretory ducts of glands. And it is probable, that the production of hair on many parts of the body, and at different periods of life, may be effected by a similar process; and more especially as every hair may be considered as a slender flexible horn, and is an appendage of the skin. See Sect. XXXIX. 3. 2. Now as there is a sensitive sympathy between the glands, which secrete the semen, and the throat, as appears

in the mumps; see Hydrophobia, Class IV. 1. 2. 7. and Parotitis, Class IV. 1. 2. 19. the growth of the beard at puberty seems to be caused by the greater action of the cutaneous glands about the chin and pubes in consequence of their sympathy with those of the testes. But this does not occur to the female sex at their time of puberty, because the sensitive sympathy in them seems to exist between the submaxillary glands, and the pectoral ones; which secrete the milk, and afford pleasure both by that secretion, and by the erection of the mammulæ, or nipples; and by delivering the milk into the mouth of the child; this sensitive sympathy of the pectoral and submaxillary glands in women is also observable in the Parotitis, or mumps, as above referred to.

When hairs grow on the face or arms so as to be disagreeable, they may be thus readily removed without pain or any ill consequence. Warm the ends of a pair of nippers or forceps, and stick on them a little resin, or burgundy pitch; by these means each single hair may be taken fast hold of; and if it be then plucked off slowly, it gives pain; but if plucked off suddenly, it gives no pain at all; because the vis inertię of the part of the skin, to which it adheres, is not overcome; and it is not in consequence separated from the cellular membrane under it. Some of the hairs may return, which are thus plucked off, or others may be induced to grow near them; but in a
little

little time they may be thus safely destroyed; which is much to be preferred to the methods said to be used in Turkey to eradicate hair; such as a mixture of orpiment and quick lime; or of liver of sulphur in solution; which injure the skin, if they are not very nicely managed; and the hair is liable to grow again as after shaving; or to become white, if the roots of it have been much inflamed by the causticity of the application. See Class I. 2. 2. 11. on grey hairs.

BIBLIOTH
COLL. MED.
MED. EDIN.

ORDO I.

Increased Irritation.

GENUS III.

With increased Actions of the Absorbent System.

THESE are not attended with so great increase of heat as in the former genus, because the fluids probably undergo less chemical change in the glands of the absorbent system; nor are the glands of the absorbent vessels so numerous or so extensive as those of the secreting ones. Yet that some heat is produced by the increased action of the absorbents appears from the greater general warmth of the skin and extremities of feeble patients after the exhibition of the peruvian bark, and other medicines of the article Sorbentia.

SPECIES.

1. *Lingua arida.* Dry tongue occurs in those fevers, where the expired air is warmer than natural; and happens to all those, who sleep with their mouths open; the currents of air in respiration increasing the evaporation. There is also a dryness in the mouth from the increased action of the absorbent vessels, when a sloe or a crab-apple is masticated; and after the perspiration has been
much

much increased by eating salt or spice, or after other copious secretions ; as after drunkenness, cathartics, or fever fits, the mucus of the mouth becomes viscid, and in small quantity, from the increased absorption, adhering to the tongue like a white slough. In the diabetes, where the thirst is very great, this slough adheres more pertinaciously, and becomes black or brown, being coloured after a few days by our aliment or drink. The inspissated mucus on the tongue of those, who sleep with their mouths open, is sometimes reddened as if mixed with blood, and sometimes a little blood follows the expuition of it from the fauces owing to its great adhesion. When this mucus adheres long to the papillæ of the tongue, the saliva, which it contains in its interstices, like a sponge, is liable to become putrid, and to acquire a bitter taste, like other putrid animal substances ; which is generally mistaken for an indication of the presence of bile.

M. M. Warm subacid liquids. See Class I. 2. 5. 8.

2. *Fauces aridæ.* Dry throat. The expuition of a frothy mucus with great and perpetual hawking occurs in hydrophobia, and is very distressing to the patient ; which may be owing to the increased irritability or sensibility of the upper part of the œsophagus, which will not permit any fluid to rest on it.

It affects some people after intoxication, when

the lungs remain slightly inflamed, and by the greater heat of the air in expiration the mucus becomes too hastily evaporated, and is expectorated with difficulty in the state of white froth.

I knew a person, who for twenty years always waked with his tongue and throat quite dry; so that he was necessitated to take a spoonful of water, as soon as he awoke; otherwise a little blood always followed the forcible expuition of the indurated mucus from his fauces. See Class II. 1. 3. 17.

M. M. Steel-springs fixed to the night-cap so as to suspend the lower jaw and keep it closed; or springs of elastic gum. Or a pot of water suspended over the bed, with a piece of list, or woollen cloth, depending from it, and held in the mouth; which will act like a syphon, and slowly supply moisture, or barley water should be frequently syringed into the mouth of the patient.

3. *Nares aridi.* Dry nostrils with the mucus hardening upon their internal surface, so as to cover them with a kind of skin or scale, owing to the increased action of the absorbents of this membrane; or to the too great dryness of the air, which passes into the lungs; or too great heat of it in its expiration.

When air is so dry as to lose its transparency; as when a tremulous motion of it can be seen over corn-fields in a hot summer's day; or when a dry
mist,

mist, or want of transparency of the air, is visible in very hot weather; the sense of smell is at the same time imperfect from the dryness of the membrane, beneath which it is spread.

4. *Expeſtoratio ſolida*. Solid expectoration. The mucus of the lungs becomes hardened by the increased abſorption, ſo that it adheres and forms a kind of lining in the air-cells, and is ſometimes ſpit up in the form of branching veſſels, which are called polypi of the lungs. See Tranſact. of the College, London. There is a rattling or wheezing of the breath, but it is not at firſt attended with inflammation.

The Cynanche trachealis, or Croup, of Dr. Cullen, or Angina polypofa of Michaelis, if they differ from the peripneumony of infants, ſeem to belong to this genus. When the difficulty of reſpiration is great, venefection is immediately neceſſary, and then an emetic, and a bliſter. And the child ſhould be kept nearly upright in bed as much as may be. See Tonſillitis, Claſs II. 1. 3. 3. and II. 1. 2. 4.

M. M. Diluents, emetics, eſſence of antimony, ſœtid gums, onions, warm bath for half an hour every day for a month. Inhaling the ſteam of water, with or without volatile alkali. Soap.

5. *Conſtipatio alvi*. Coſtiveness from increased action of the inteſtinal abſorbents. The feces are

hardened in lumps called scybala; which are sometimes obliged to be extracted from the rectum with a kind of marrow spoon. This is said to have happened from the patient having taken much rust of iron. The mucus is also hardened so as to line the intestines, and to come away in skins, rolled up as they pass along, so as to resemble worms, for which they are frequently mistaken; and sometimes it is evacuated in still larger pieces, so as to counterfeit the form of the intestines, and has been mistaken for a portion of them. Balls of this kind, nearly as heavy as marble, and considerably hard, from two inches to five in diameter, are frequently found in the bowels of horses. Similar balls found in goats have been called Bezoar.

M. M. Cathartics. Diluents, fruit, oil, soap, sulphur, warm bath. Sprinkling with cold water, cool clothing. See Class I. 2. 4. 18.

6. *Cutis arida*. Dry skin. This dry skin is not attended with coldness as in the beginning of fevers. Where this cutaneous absorption is great, and the secreted material upon it viscid, as on the hairy scalp, the skin becomes covered with hardened mucus; which adheres so as not to be easily removed, as the scurf on the head; but is not attended with inflammation like the Tinea, or Lepra. The moisture, which appears on the skin beneath resinous or oily plasters, or which is seen to adhere to such plasters, is owing to their preventing the
 9 exhalation

exhalation of the perspirable matter, and not to their increasing the production of it, as some have idly imagined.

M. M. Warm bathing, oil externally, oil-skin gloves, resinous plaisters. Wax.

7. *Urina parca colorata*. Diminished urine, which is high coloured, and deposits an earthy sediment, when cold, is owing to the great action of the urinary absorbents. See Class I. 1. 2. 4. In some dropsies the cutaneous absorbents are paralytic, as well as those opening into the cellular membrane; and hence, no moisture being acquired from the atmosphere, or from the cellular membrane, great thirst is excited; and great absorption from all parts, where the absorbents are still capable of action. Hence the urine is in very small quantity, and of deep colour, with copious sediment; and the kidneys are erroneously blamed for not doing their office; stimulant diuretic medicines are given in vain; and very frequently the unhappy patient is restrained from quenching his thirst, and dies a martyr to false theory.

M. M. Diluent liquids, and warm bathing, are the natural cure of this symptom; but it generally attends those dropsies, which are seldom curable; as they are owing to a paralysis both of the cutaneous and cellular lymphatics.

8. *Calculus felleus*. Gall-stone. From the too
hasty

hasty absorption of the thinner parts of the bile, the remainder is left too viscid, and crySTALLIZES into lumps; which, if too large to pass, obstruct the ductus choledochus, producing pain at the pit of the stomach, and jaundice. When the indurated bile is not harder than a boiled pea, it may pass through the bile-duct with difficulty by changing its form; and thus gives those pains, which have been called spasms of the stomach; and yet these viscid lumps of bile may afterwards dissolve, and not be visible among the feces.

In two instances I have seen from thirty to fifty gall-stones voided after taking an oil vomit as below. They were about the size of peas, and distinguishable when dry by their being inflammable like bad wax, when put into the flame of a candle. For other causes of jaundice, see Class I. 2. 4. 19.

M. M. Diluents, daily warm bathing. Ether mixed with yolk of egg and water. Unboiled acrid vegetables, as lettuce, cabbage, mustard, and cresses. When in violent pain, four ounces of oil of olives, or of almonds, should be swallowed; and as much more in a quarter of an hour, whether it stays or not. The patient should lie on the circumference of a large barrel, first on one side, and then on the other. Electric shocks through the gall-duct. Factitious Seltzer water made by dissolving one dram of sal soda in a pint of water; to half a pint of which made luke-warm add ten drops

drops of marine acid ; to be drunk as soon as mixed, twice a day for some months. Opium must be used to quiet the pain, if the oil does not succeed, as two grains, and another grain in half an hour if necessary. See Class IV. 2. 2. 4.

9. *Calculus renis*. Stone of the kidney. The pain in the loins and along the course of the ureter from a stone is attended with retraction of the testicle in men, and numbness on the inside of the thigh in women. It is distinguished from the lumbago or sciatica, as these latter are seldom attended with vomiting, and have pain on the outside of the thigh, sometimes quite down to the ankle or heel. See Herpes and Nephritis.

Where the absorption of the thinner parts of the secretion takes place too hastily in the kidneys, the hardened mucus, and consequent calculous concretions, sometimes totally stop up the tubuli uriniferi, and no urine is secreted. Of this many die, who have drunk much vinous spirit, and some of them recover by voiding a quantity of white mucus, like chalk and water ; and others by voiding a great quantity of sand, or small calculi. This hardened mucus frequently becomes the nucleus of a stone in the bladder. The salts of the urine, called microcosmic salt, are often mistaken for gravel, but are distinguishable both by their angles of crystallization, their adhesion to the sides or bottom of the pot, and by their not being formed till the
urine

urine cools. Whereas the particles of gravel are generally without angles, and always drop to the bottom of the vessel, immediately as the water is voided.

Though the proximate cause of the formation of the calculous concretions of the kidneys, and of chalk-stones in the gout, and of the insoluble concretions of coagulable lymph, which are found on membranes, which have been inflamed in peripneumony, or rheumatism, consists in the too great action of the absorbent vessels of those parts; yet the remote cause in these cases is probably owing to the inflammation of the membranes; which at that time are believed to secrete a material more liable to coagulate or concrete, than they would otherwise produce by increased action alone without the production of new vessels, which constitutes inflammation. As defined in Class II. 1. 2.

The fluids secreted from the mucous membranes of animals are of various kinds and consistencies. Hair, silk, scales, horns, finger-nails, are owing to natural processes. Gall-stones, stones found in the intestines of horses, scurf of the skin in leprosy, stones of the kidneys and bladder, the callus from the inflamed periosteum, which unites broken bones, the calcareous cement, which repairs the injured shells of snails, the calcareous crust on the eggs of birds, the annually renewed shells of crabs, are all instances of productions from mucous membranes,

branes, afterwards indurated by absorption of their thinner parts.

All these concretions contain phosphoric acid, mucus, and calcareous earth in different proportions; and are probably so far analogous in respect to their component parts as well as their mode of formation. Some calcareous earth has been discovered after putrefaction in the coagulable lymph of animals. Fordyce's Elements of Practice. A little calcareous earth was detected by Scheele or Bergman in the calculus of the bladder with much phosphoric acid, and a great quantity of phosphoric acid is shewn to exist in oyster-shells by their becoming luminous on exposing them a while to the sun's light after calcination; as in the experiments of Wilson. Botanic Garden, P. 1. Canto 1. l. 182, note. The exchange of which phosphoric acid for carbonic acid, or fixed air, converts shells into limestone, producing mountains of marble, or calcareous strata.

Now as the hard lumps of calcareous matter, termed crabs' eyes, which are found in the stomachs of those animals previous to the annual renewal of their shells, are redissolved, probably by their gastric acid, and again deposited for that purpose; may it not be concluded, that the stone of the bladder might be dissolved by the gastric juice of fish of prey, as of crabs, or pike; or of voracious young birds, as young rooks or hawks, or even of calves? Could not these experiments be tried by
collecting

collecting the gastric juice by putting bits of sponge down the throats of young crows, and retracting them by a string in the manner of Spallanzani? or putting pieces of calculus down the throat of a living crow, or pike, and observing if they become digested? and lastly, could not gastric juice, if it should appear to be a solvent, be injected and born in the bladder without injury by means of catheters of elastic resin, or caoutchouc?

M. M. Diluents. Cool dress. Frequent change of posture. Frequent horizontal rest in the day. Bathe the loins every morning with a sponge and cold water. Aerated alkaline water internally. Abstinence from all fermented or spirituous liquors. Whatever increases perspiration injures these patients, as it dissipates the aqueous particles, which ought to dilute the urine. When the constitution begins to produce gravel, it may I believe be certainly prevented by a total abstinence from fermented or spirituous liquors; by drinking much aqueous fluids; as toast and water, tea, milk and water, lemonade; and lastly by thin clothing, and sleeping on a hardish bed, that the patient may not lie too long on one side. See Class IV. 2. 2. 2. There is reason to believe, that the daily use of opium contributes to produce gravel in the kidneys by increasing absorption, when they are inflamed; in the same manner as is done by fermented or spirituous liquor. See Class I. 3. 2. 11.

When the kidneys are so obstructed with gravel,
that

that no urine passes into the bladder; which is known by the external appearance of the lower part of the abdomen, which, when the bladder is full, seems as if contracted by a cord between the navel and the bladder; and by the tension on the region of the bladder distinguishable by the touch; or by the introduction of the catheter; the following methods of cure are frequently successful. Venesection to six or eight ounces, ten grains of calomel, and an infusion of fenna with salts and oil, every three hours, till stools are procured. Then an emetic. After the patient has been thus evacuated, a blister on the loins should be used; and from ten to twenty electric shocks should be passed through the kidneys, as large as can be easily borne, once or twice a day. Along with this method the warm bath should be used for an hour once or twice a day. After repeated evacuations a clyster, consisting of two drams of turpentine dissolved by yolk of egg, and sixty drops of tincture of opium, should be used at night, and repeated, with cathartic medicines interposed, every night, or alternate nights. Aerated solution of alcali should be taken internally, and balsam of copaiva, three or four times a day. Some of these patients recover after having made no water for nine or ten days.

If a stone sticks in the ureter with incessant vomiting ten grains of calomel must be given in small pills as above; and some hours afterwards infusion of fenna and salts and oil, if it can be made to stay
on

on the stomach. And after the purge has operated four or five times, an opiate is to be given, if the pain continues, consisting of two grains of opium. If this does not succeed, ten or twenty electric shocks through the kidney should be tried, and the purgative repeated, and afterwards the opiate. The patient should be frequently put into the warm bath for an hour at a time. Eighty or a hundred drops of laudanum given in a glyster, with two drams of turpentine, are to be preferred to the two grains given by the stomach as above, when the pain and vomiting are very urgent.

10. *Calculus vesicae*. Stone of the bladder. The nucleus, or kernel, of these concretions is always formed in the kidney, as above described; and passing down the ureter into the bladder, is there perpetually increased by the mucus and salts secreted from the arterial system, or by the mucus of the bladder, disposed in concentric strata. The stones found in the bowels of horses are also formed on a nucleus, and consist of concentric spheres; as appears in sawing them through the middle. But as these are formed by the indurated mucus of the intestines alone without the urinary salts, it is probable a difference would be found on their analysis.

As the stones of the bladder are of various degrees of hardness, and probably differ from each other in the proportions at least of their
component

component parts; when a patient, who labours under this afflicting disease, voids any small bits of gravel; these should be kept in warm solutions of caustic alkali, or of mild alkali well aerated; and if they dissolve in these solutions, it would afford greater hopes, that that which remains in the bladder, might be affected by these medicines taken by the stomach, or injected into the bladder.

To prevent the increase of a stone in the bladder much diluent drink should be taken; as half a pint of water warmed to about eighty degrees, three or four times a day: which will not only prevent the growth of it, by preventing any microcosmic salts from being precipitated from the urine, and by keeping the mucus suspended in it; but will also diminish the stone already formed, by softening, and washing away its surface. To this must be added cool dress, and cool bed-clothes, as directed above in the calculus renis.

When the stone is pushed against or into the neck of the bladder, great pain is produced; this may sometimes be relieved by the introduction of a bougie to push the stone back into the fundus of the bladder. Sometimes by change of posture, or by an opiate either taken into the stomach, or by a clyster.

A dram of sal soda, or of salt of tartar, dissolved in a pint of water, and well saturated with carbonic acid (fixed air), by means of Dr. Nooth's

glass apparatus, and drunk every day, or twice a day, is the most efficacious internal medicine yet discovered, which can be easily taken without any general injury to the constitution. An aerated alkaline water of this kind is sold under the name of factitious Seltzer water, by J. Schweppe, at No. 8, King's-street, Holborn, London; which I am told is better prepared than can be easily done in the usual glass-vessels, probably by employing a greater pressure in wooden ones.

A curious account is given in a letter to Sir John Sinclair from Colonel Martin; who asserts, that, after using bougies and injections into the bladder, the passage of the urethra became less sensible to pain, and he was enabled to introduce small files (I suppose, with their backs smooth); and that by these he gradually filed away the stone, as it lay in the neck of the bladder. When the stone did not properly present itself, he introduced warm water by injection into the bladder, and thus, by again endeavouring to discharge it, brought forward the stone to the neck of it. He used the file three times in twenty-four hours from April till October. Medical Journal, No. II. p. 121. If this process should be again attempted, perhaps the file might be introduced through a flexible canula, with a metallic hood at the internal end of the canula to cover the back of the file, so as to prevent the friction of it against the urethra, or neck of the bladder. If the urethra,
by

by frequent trials, should become so insensible as to admit easily the frequent introduction of a metallic canula, might not two fine steel wires properly tempered be joined at one end by a hinge, and thus introduced through the canula into the bladder; and when protruded beyond the extremity of the canula, they might open by their elasticity so as to receive the stone, and confine it against the end of the canula, by retracting them? The proper direction of the wire-springs, so as to open when they are pushed through the canula, must be previously given them. If this could be managed, a small file or borer might at the same time be introduced through the canula, the handles of which might consist of joints to permit them to bend in all directions, and thus the stone might be broken to pieces by a few trials; or if it was a soft or fragile stone, the retraction of the wire-bow might divide it at every trial, till it became almost reduced to powder. A little mechanical ingenuity might be necessary in the construction and use of this machinery; but I believe it not to be impracticable, since I read the above account of Colonel Martin, though I had often before thought of it with despair of its successful application.

Lithotomy is the last resource. Will the gastric juice of animals dissolve calculi? Will fermenting vegetable juices, as sweet-wort, or sugar

and water in the act of fermentation with yeast, dissolve any kind of animal concretions ?

11. *Calculus arthriticus.* Gout-stones are formed on inflamed membranes, like those of the kidneys above described, by the too hasty absorption of the thinner and saline parts of the mucus. Similar concretions have been produced in the lungs, and even in the pericardium ; and it is probable, that the ossification, as it is called, of the minute arteries, which is said to attend old age, and to precede some mortifications of the extremities, may be a process of this kind.

As gout-stones lie near the surface, it is probable, that ether, frequently applied in their early state, might render them so liquid as to permit their re-absorption ; which the stimulus of the ether might at the same time encourage.

12. *Rheumatismus chronicus.* Chronic rheumatism. After the acute rheumatism some inspissated mucus, or material similar to chalk-stones of the gout, which was secreted on the inflamed membrane, is probably left, owing to the too hasty absorption of the thinner and saline part of it ; and by lying on the fascia, which covers some of the muscles, pains them, when they move and rub against it, like any extraneous material.

The pain of the shoulder, which attends inflammations

inflammations of the upper membrane of the liver, and the pains of the arms, which attend asthma dolorificum, or dropfy of the pericardium, are distinguished from the chronic rheumatism, as in the latter the pain only occurs on moving the affected muscles.

M. M. Warm bath, cold bath, bandage of emplastrum de minio put on tight, so as to compress the part. Cover the part with flannel. With oiled silk. Rub it with common oil frequently. With ether. A blister. A warmer climate. Venesection. A grain of calomel and a grain of opium for ten successive nights. The Peruvian bark.

13. *Cicatrix vulnerum*. The scar after wounds. In the healing of ulcers the matter is first thickened by increasing the absorption in them; and then lessened, till all the matter is absorbed, which is brought by the arteries, instead of being deposited in the ulcer.

M. M. This is promoted by bandage, by the forbentia externally, as powder of bark, white lead; solution of sugar of lead. And by the forbentia internally after evacuations. See Sect. XXXIII.

3 .2.

In those ulcers, which are made by the contact of external fire, the violent action of the fibres, which occasions the pain, is liable to continue,

F 3

after

after the external heat is withdrawn. This should be relieved by external cold, as of snow, salt and water recently mixed, ether, or spirits of wine, suffered to evaporate on the part.

The cicatrix of an ulcer generally proceeds from the edges of it; but in large ones frequently from the middle, or commences in several places at the same time; which probably contributes to the unevenness of large scars.

14. *Corneæ obfuscatio*. Opacity of the cornea. There are few people, who have passed the middle of life, who have not at some time suffered some slight scratches or injuries of the cornea, which by not healing with a perfectly smooth surface, occasion some refractions of light, which may be conveniently seen in the following manner: fill a tea-saucer with cream and tea, or with milk, and holding it to your lips, as if going to drink it, the imperfections of the cornea will appear like lines or blotches on the surface of the fluid, with a less white appearance than that surface. Those blemishes of the eye are distinguished from the *muscæ volitantes* described in Class I. 2. 5. 3. by their being invariably seen at any time, when you look for them.

Ulcers may frequently be seen on the cornea after ophthalmia, like little pits or indentations beneath the surface of it; in this case no external application

application should be used, lest the scar should be left uneven; but the cure should be confined to the internal use of thirty grains of bark twice a day, and from five to ten drops of laudanum at night, with five grains of rhubarb, if necessary.

After ulcers of the cornea, which have been large, the inequalities and opacity of the cicatrix obscure the sight: in this case, could not a small piece of the cornea be cut out by a kind of trephine about the size of a thick bristle, or a small crow-quill, and would it not heal with a transparent scar? This experiment is worth trying, and might be done by a piece of hollow steel wire with a sharp edge, through which might be introduced a pointed steel screw; the screw to be introduced through the opaque cornea to hold it up, and press it against the cutting edge of the hollow wire or cylinder; if the scar should heal without losing its transparency, many blind people might be made to see tolerably well by this slight and not painful operation. An experiment I wish strongly to recommend to some ingenious surgeon or oculist.

Or it may be attempted by pressing one end of a small canula on the centre of the cornea, and passing down it a bit of luna cornea, fixed in the end of a smaller canula, and thus introduced: the eye may be held steady by passing a thread by means of a small curved needle through a part

of the tunica adjunctiva, which may be held by an assistant, or by pressing on it the end of the canula as above, which might have a flat circular rim round its extremity for that purpose.

ORDO I.

Increased Irritation.

GENUS IV.

With increased Actions of other Cavities and Membranes.

SPECIES.

1. *Nictitatio irritativa.* Winking of the eyes is performed every minute without our attention, for the purpose of cleaning and moistening the eye-ball; as further spoken of in Class II. 1. 1. 8. When the cornea becomes too dry, it becomes at the same time less transparent; which is owing to the pores of it being then too large, so that the particles of light are refracted by the edges of each pore, instead of passing through it; in the same manner as light is refracted by passing near the edge of a knife. When these pores are filled with water, the cornea becomes again transparent. This want of transparency of the cornea is visible sometimes in dying people, owing to their inirritability, and consequent neglect of nictitation.

The increase of transparency by filling the pores with fluid is seen by soaking white paper in oil; which from an opaque body becomes very transparent, and accounts for a curious atmospheric phenomenon;

phenomenon; when there exists a dry mist in a morning so as to render distant objects less distinct, it is a sign of a dry day; when distant objects are seen very distinct, it is a sign of rain. See Botan. Garden, Part I. add. note xxv. The particles of air are probably larger than those of water, as water will pass through leather and paper, which will confine air, hence when the atmosphere is much deprived of moisture, the pores of the dry air are so large, that the rays of light are refracted by their edges instead of passing through them. But when as much moisture is added as can be perfectly dissolved, the air becomes transparent; and opaque again, when a part of this moisture collects into small spherules previous to its precipitation. This also accounts for the want of transparency of the air, which is seen in tremulous motions over corn-fields on hot summer-days, or over brick-kilns, after the flame is extinguished, while the furnace still remains hot.

2. *Deglutitio irritativa.* The deglutition of our saliva is performed frequently without our attention, and is then an irritative action in consequence of the stimulus of it in the mouth. Or perhaps sometimes for the purpose of diffusing a part of it over the dry membranes of the fauces and pharynx; in the same manner as tears are diffused over the cornea of the eye by the act of nictitation to clean or moisten it.

3. *Respiratio*

3. *Respiratio et Tussis irritativæ.* In the acts of respiration and of coughing there is an increased motion of the air-cells of the lungs owing to some stimulating cause, as described above in Class I. 1. 2. 8. and I. 1. 3. 4. and which are frequently performed without our attention or consciousness, and are then irritative actions; and thus differ from those described in Class II. 1. 1. 2. and 5. To these increased actions of the air-cells are superadded those of the intercostal muscles and diaphragm by irritative association. When any unnatural stimulus acts so violently on the organs of respiration as to induce pain, the sensorial power of sensation becomes added to that of irritation, and inflammation of the membranes of them is a general consequence.

4. *Exclusio bilis.* The exclusion of the bile from the gall-bladder, and its derivation into the duodenum, is an irritative action in consequence of the stimulus of the aliment on the extremity of the biliary duct, which terminates in the intestine. The increased secretion of tears is occasioned in a similar manner by any stimulating material in the eyes; which affects the excretory ducts of the lacrymal glands. A pain of the external membrane of the eye sometimes attends any unusual stimulus of it, then the sensorial power of sensation becomes added to that of irritation, and a superficial inflammation is induced.

5. *Dentitio.*

5. *Dentitio*. Toething. The pain of toething often begins much earlier than is suspected; and is liable to produce convulsions; which are sometimes relieved, when the gum swells, and becomes inflamed; at other times a diarrhœa supervenes, which is generally esteemed a favourable circumstance, and seems to prevent the convulsions by supplying another means of relieving the pain of dentition by irritative exertion; and a consequent temporary exhaustion of sensorial power. See Class I. 1. 2. 5. Sect. XXXV. 2. 1.

The convulsions from toething generally commence long before the appearance of the teeth; but as the two middle incisors of the lower jaw generally appear first, and then those of the upper, it is advisable to lance the gums over these longitudinally in respect to the jaw-bones, and quite down to the periosteum, and through it.

As the convulsions attending the commencement of toething are not only dangerous to life in their greatest degree, but are liable to induce stupor or insensibility by their continuance even in a less degree, the most efficacious means should be used to cure them.

M. M. Lance the gum of the expected teeth quite through the periosteum longitudinally. Venesection by the lancet or by two or three leeches. One grain of calomel as a purge. Tincture of jalap, five or six drops in water every three hours till it purges, to be repeated daily. After evacuations

cuations a small blister on the back or behind the ears. And lastly, two or three drops of laudanum according to the age of the child. Warm bath. See Class III. 1. 1. 5. and 6.

6. *Priapismus chronicus*. I have seen two cases, where an erection of the penis, as hard as horn, continued two or three weeks without any venereal desires, but not without some pain; the easiest attitude of the patients was lying upon their backs with their knees up. At length the corpus cavernosum urethræ became soft, and in another day or two the whole subsided. In one of them a bougie was introduced, hoping to remove some bit of gravel from the caput gallinaginis, camphor, warm bathing, opium, lime-water, cold aspersions, bleeding in the veins of the penis, were tried in vain. One of them had been a free drinker, had much gutta rosacea on his face, and died suddenly a few months after his recovery from this complaint. Was it a paralysis of the terminations of the veins, which absorb the blood from the tumid penis? or from the stimulus of indurated semen in the seminal vessels? In the latter case some venereal desires should have attended. Class III. 1. 2. 16.

The priapismus, which occurs to vigorous people in a morning before they awake, has been called the signum salutis, or banner of health, and is occasioned by the increase of our irritability

or sensibility during sleep, as explained in Sect. XVIII. 15.

7. *Distentio mammularum*. The distention of the nipples of lactescent women is at first owing to the stimulus of the milk. See Sect. XIV. 8. and Sect. XVI. 5. See Class II. 1. 7. 10.

8. *Descensus uteri*. This is a very frequent complaint after bad labours, the fundus uteri becomes inverted and descends like the prolapsus ani.

M. M. All the usual pessaries are very inconvenient and ineffectual. A piece of soft sponge about two inches diameter introduced into the vagina gives great ease to these patients, and supports the uterus; it should have a string put through it to retract it by.

There are also pessaries now made of elastic gum, which are said to be easily worn, and to be convenient, from their having a perforation in their centre.

9. *Prolapsus ani*. The lower part of the rectum becomes inverted, and descends after every stool chiefly in children; and thus stimulates the sphincter ani like any other extraneous body.

M. M. It should be dusted over with very fine powder of gum sandarach, and then replaced. Astringent fomentations; as an infusion of oak-

bark, or a slight solution of alum. Horizontal rest frequently in the day.

10. *Lumbricus*. Round worm. The round worm is suspected in children when the belly is tumid, and the countenance bloated and pale, with swelling of the upper lip. The generation of these worms is promoted by the too dilute state of the bile, as is evident in the fluke-worm found in the biliary ducts and substance of the liver in sheep; and in water-rats, in the livers of which last animals they were lately detected in large numbers by Dr. Capelle. Transactions of the college at Philadelphia, v. i.

Now as the dilute state of the bile depends on the deficiency of the absorption of its thinner parts, it appears, that the tumid belly, and bloated countenance, and swelled upper lip, are concomitant circumstances attending the general inactivity of the absorbent system; which is therefore to be esteemed the remote cause of the generation of worms.

The simplicity of the structure of worms probably enables them to exist in more various temperatures of heat; and their being endued with life prevents them from being destroyed by digestion in the stomach, probably in the same manner as the powers of life prevent the fermentation and putrefaction of the stomach itself. Hence I conclude, that worms are originally taken into our
alimentary

alimentary canal from without ; as I believe similar worms of all kinds are to be found out of the body.

M. M. The round worm is destroyed by a cathartic with four or six grains of calomel ; and afterwards by giving six or eight grains of filings of iron twice a day for a fortnight. See Hepatis tumor, Class I. 2. 3. 9. As worms are liable to come away in fevers, whether of the hectic or putrid kind, could they be removed by purulent matter, or rotten egg, or putrid flesh, since in those fevers from the enfeebled action of the intestines the feces become highly putrid.

The sharp spiculæ or hairs, which are found on the pods of cowhage, *stizolobium siliqua hirsuta*, have been recommended in worm-cases, and said to destroy them by mechanical puncture ; the late Mr. Power of Polesworth assured me, he had had great success with this medicine, and gave about six or eight grains in a bolus three or four times on one day, with a brisk cathartic on the next day. Some have recommended chopped hair or bristles for this purpose. There are numerous sharp spiculæ in the fruit of the wild rose, which might be worth trying in this disease, and the hairs on full grown hairy caterpillars, if the animal be laid on the hand, especially between the fingers, are liable to stick in the skin, and to produce slight inflammation and itching, and might also be worth trying in worm-cases. But it is asserted in M. Vailant's

lant's Travels in Africa, that when these insects feed on poisonous plants, they become themselves so venomous, that the natives collect a juice from them, with which when putrid they smear their war weapons to poison them.

11. *Tenia*. Tape-worm consists of a chain of animals extending from the stomach to the anus. See Sect. XXXIX. 2. 3. It frequently exists in cats, rats, and geese, and probably in many other animals.

The worms of this genus possess a wonderful power of retaining life. Two of them, which were voided by a pointer dog in consequence of violent purgatives, each of which were several feet in length, had boiling water poured on them in a basin; which seemed not much to inconvenience them. When the water was cool, they were taken out and put into gin or whiskey of the strongest kind, in which their life and activity continued unimpaired; and they were at length killed by adding to the spirit a quantity of corrosive sublimate. Medic. Comment. for 1791, p. 370.

The tape-worm is cured by an amalgama of tin and quicksilver, such as is used on the back of looking-glasses; an ounce should be taken every two hours, till a pound is taken; and then a brisk cathartic of Glauber's salt two ounces, and common salt one ounce, dissolved in two wine pints of water, half a pint to be taken every hour till it purges. The

worm extends from the stomach to the anus, and the amalgama tears it from the intestine by mechanical pressure, acting upon it the whole way. Electric shocks through the duodenum greatly assist the operation. Large doses of tin in powder. Iron filings in large doses. The powder of fern-root seems to be of no use, as recommended by M. Nouffier. This worm, as well as the lumbricus or round-worm, is sometimes brought up by vomiting; when either of these worms is in the stomach it gives a tickling sensation about the fauces, which parts sympathize with the cardia ventriculi. See Annals of Medicine, 1797. Give an emetic of tartarized antimony, or of vitriol of zinc.

12. *Ascarides*. Thread worms. These worms are said to be more frequent in some parts of this kingdom than in others, as near the fens of Lincolnshire. Do they escape from the body and become flies, like the bott-worm in horses? Do they crawl from one child to another in the same bed? Are they acquired from flies or worms, which are seen in putrid necessary houses, as these worms as well as the tape-worms, are probably acquired from without? this may account for their re-appearance a few weeks or months after they have been destroyed; or can this happen from the eggs or parts of them remaining?

Ascarides appear to be of two kinds, the com-

mon small one like a thread; which has a very sharp head, as appears in the microscope; and which is so tender, that the cold air soon renders it motionless; and a larger kind above an inch long, and nearly as thick as a very small crow-quill, and which is very hard in respect to its texture, and very tenacious of life. One of these last was brought to me, and was immediately immersed in a strong solution of sugar of lead, and lived in it a very long time without apparent inconvenience.

M. M. *Ascarides* are said to be weakened by twenty grains of cinnabar and five of rhubarb taken every night, but not to be cured by this process. As these worms are found only in the rectum, variety of clysters have been recommended. A clyster consisting of one eighth or one fourth of an ounce of succotrine aloes in powder boiled in a pint of milk or of gruel, till it is dissolved, and injected once a week for many weeks, I believe has sometimes effected a cure. I was informed of a case, where solutions of mercurial ointment were used as a clyster every night for a month without success. Clysters of Harrowgate water are recommended, either of the natural, or of the factitious, as described below, which might have a greater proportion of liver of sulphur in it. As the cold air soon destroys them, after they are voided, could clysters of iced water be used with advantage? or of spirit of wine and water? or of ether and water? Might not a piece of candle, about an inch long,

or two such pieces, smeared with mercurial ointment, and introduced into the anus at night, or twice a day, be effectual by compressing their nidus, as well as by the poison of the mercury?

The clysters should be large in quantity, that they may pass high in the rectum, as two drams of tobacco boiled a minute in a pint of water. Or perhaps what might be still more efficacious and less inconvenient, the smoke of tobacco injected by a proper apparatus every night, or alternate nights, for six or eight weeks. This was long since recommended, I think, by Mr. Turner of Liverpool; and the reason it has not succeeded, I believe to have been owing to the imperfections of the joints of the common apparatus for injecting the smoke of tobacco, so that it did not pass into the intestine, though it was supposed to do so, as I once observed. The smoke should be received from the apparatus into a large bladder; and it may then be certainly injected like the common clyster with sufficient force; otherwise oiled leathers should be nicely put round the joints of the machine; and a wet cloth round the injecting pipe to prevent the return of the smoke by the sides of it. Clysters of carbonated hydrogen gas, or of other factitious airs, might be tried; or of the hairs of *siliqua hirsuta*.

Harrowgate water taken into the stomach, so as to induce six or seven stools every morning, for four or six weeks, is perhaps the most efficacious method

method in common use. A factitious Harrowgate water may be made probably of greater efficacy than the natural, by dissolving one ounce of marine salt, (called bay salt) and half an ounce of magnesia Glauber's salt, (called Epsom salt, or bitter purging salt) in twenty-eight ounces of water. A quarter or half a pint of this is to be taken every hour, or two hours in the morning, till it operates, with a tea-spoonful of a solution of liver of sulphur, which is to be made by putting an ounce of hepar sulphuris into half a pint of water. See Class IV. 1. 2. 9.

13. *Dracunculus*. A thin worm brought from the coast of Guinea. It is found in the interstices of the muscles, and is many yards long; it makes a small ulcer; which is cured by extracting an inch of the worm a day, and wrapping the extracted part slowly round a bit of tobacco-pipe till next day, so as not to break it. I have twice seen long worms, like a thick horse hair, in water in July in this country, which appeared hard and jointed.

14. *Morpiones*. Crab-lice. The excrement of this animal stains the linen, and appears like diluted blood.

M. M. Spirit of wine. Mercurial ointment, shaving the part. Oil destroys other insects, if they be quite covered with it, as the ticks on dogs, and would probably therefore destroy these. Its man-

ner of operation is by stopping up or filling their spiracula, or breathing pores ; a few drops of oil poured on a wasp, so as to cover it, destroy it in a few seconds.

15. *Pediculi*. Lice. There is said to be a disease, in which these animals are propagated in indestructible numbers, so as to destroy the patient.

M. M. Cleanliness, mercurial ointment, stavis acria in powder, or the tincture of it in spirit of wine. Spirit of wine alone ? Bath of oil ?

ORDO I.

Increased Irritation.

GENUS V.

With increased Actions of the Organs of Sense.

SPECIES.

1. *Visus acrior.* Acuter sight. There have been instances of people, who could see better in the gloom of the evening, than in the stronger light of the day; like owls, and bats, and many quadrupeds, and flying insects. When the eye is inflamed, great light becomes eminently painful, owing to the increased irritative motions of the retina, and the consequent increased sensation. Thus when the eye is dazzled with sudden light, the pain is not owing to the motion of the iris; for it is the contraction of the iris, which relieves the pain from sudden light; but to the too violent contractions of the moving fibres, which constitute the extremities of the optic nerve.

2. *Auditus acrior.* The irritative ideas of hearing are so increased in energy as to excite our attention. This happens in some diseases of the epileptic kind, and in some fevers. Hence the whispering of the currents of air in a room, the respiration of the company, and noises before unperceived, become troublesome; and sounds louder than

usual, or unexpected, produce starting, and convulsions.

M. M. Put oil of almonds into the ears. Stop the meatus auditorius with cotton wool. Set the feet of the patient's bed on cushions, or suspend it by cords from the ceiling.

3. *Olfæctus acrior.* The irritative ideas of smell from the increased action of the olfactive nerve excite our attention. Hence common odours are disagreeable; and are perceived from variety of objects, which were, before thought inodorous. These are commonly believed to be hallucinations of the sense.

M. M. Snuff starch up the nostrils.

4. *Gustus acrior.* The irritative ideas of taste, as of our own saliva, and even of the atmospheric air, excite our attention; and common tastes are disagreeably strong.

M. M. Water. Mucilage. Vegetable acids. Scrape the tongue clean. Rub it with a sage-leaf and vinegar.

5. *Tactus acrior.* The irritative ideas of the nerves of touch excite our attention: hence our own pressure on the parts, we rest upon, becomes uneasy with universal soreness.

M. M. Soft feather-bed. Combed wool put under the patients, which rolls under them, as they

turn, and thus prevents their friction against the sheets. Drawers of soft leather. Plasters of cerate with calamy.

6. *Sensus caloris acrior.* Acuter sense of heat occurs in some diseases; and that even when the perceptible heat does not appear greater than natural to the hand of another person. See Class I. 1. 2. See Sect. XIV. 8. All the above increased actions of our organs of sense separately or jointly accompany some fevers, and some epileptic diseases; the patients complaining of the perception of the least light, noises in their ears, bad smells in the room, and bad tastes in their mouths, with foreness, numbness, and other uneasy feels, and with disagreeable sensations of general or partial heat.

7. *Sensus extensionis acrior.* Acuter sense of extension. The sense of extension was spoken of in Sect. XIV. 7. and XXXII. 4. The defect of distention in the arterial system is accompanied with faintness; and its excess with sensations of fulness, or weight, or pressure. This however refers only to the vascular muscles, which are distended by their appropriated fluids; but the longitudinal muscles are also affected by different quantities of extension, and become violently painful by the excess of it.

These pains of muscles and of membranes are
generally

generally divided into acute and dull pains. The former are generally owing to increase of extension, as in pricking the skin with a needle; and the latter generally to defect of extension, as in cold head-aches; but if the edge of a knife, or point of a pin, be gradually pressed against the fibres of muscles or membranes, there would seem to be three states or stages of this extension of the fibres; which have acquired names according to the degree or kind of sensation produced by the extension of them; these are 1. titillation-or tickling; 2. itching; and the 3. smarting, as described below. See Sect. XIV. 9.

8. *Titillatio*. Tickling is a pleasurable pain of the sense of extension above mentioned, and therefore excites laughter; as described in Sect. XXXIV.

1. 4. The tickling of the nostrils, which precedes the efforts of sneezing, is owing to the increased irritation occasioned by external stimulus; and is attended with a pleasurable sensation in consequence of the increased action of the part. When this action is exerted in a greater degree, the sensation becomes painful, and the convulsion of sneezing ensues; as the pain in tickling the soles of the feet of children is relieved by laughter.

A lady after a bruise on her nose by a fall was affected with incessant sneezing, and relieved by snuffing starch up her nostrils. Perpetual sneezings in the measles, and in catarrhs from cold, are ow-

ing to the stimulus of the saline part of the mucous effusion on the membrane of the nostrils. See Class II. 1. 1. 2.

9. *Pruritus*. Itching seems to be a greater degree of titillation, and to be owing to the stimulus of some acrid material; as the matter of the itch; or of the herpes on the scrotum, and about the anus; or from those universal eruptions, which attend some elderly people, who have drunk much vinous spirit. It occurs also, when inflammations are declining, as in the healing of blisters, or in the cure of ophthalmia, as the action of the vessels is yet so great as to produce sensation; which, like the titillations that occasion laughter, is perpetually changing from pleasure to pain.

When the natural efforts of scratching do not relieve the pain of itching, it sometimes increases so as to induce convulsions and madness. As in the furor uterinus; and satyriasis, and in the sphincter ani and scrotum. See Class II. 1. 4. 14. IV. 2. 2. 6.

M. M. Warm bath. Fomentation. Alcohol externally. Poultice. Oiled silk. Mercurial ointments on small surfaces at once. See Class II. 1. 4. 12. Solutions of lead on small surfaces at once.

10. *Dolor urens*. Smarting follows the edge of a knife in making a wound, and seems to be owing
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ing to the distention of a part of a fibre, till it breaks. - A smarting of the skin is liable to affect the scars left by herpes or shingles; and the callous parts of the bottoms of the feet; and around the bases of corns on the toes; and frequently extends after sciatica along the outside of the thigh, and of the leg, and part of the foot. All these may be owing to the stimulus of extension, by blood or serum being forced into vessels nearly coalesced.

M. M. Emplastrum de minio put like a bandage on the part. Warm fomentation. Oil and camphor rubbed on the part. Oil-silk covering. A blister on the part. Ether, or alcohol, suffered to evaporate on the part.

11. *Consternatio*. Surprise. As our eyes acquaint us at the same time with less than half of the objects, which surround us, we have learned to confide much in the organ of hearing to warn us of approaching dangers. Hence it happens, that if any sound strikes us, which we cannot immediately account for, our fears are instantly alarmed. Thus in great debility of body, the loud clapping of a door, or the fall of a fire-shovel, produces alarm, and sometimes even convulsions; the same occurs from unexpected sights, and in the dark from unexpected objects of touch.

In these cases the irritability is less than natural, though it is erroneously supposed to be greater; and the mind is busied in exciting a train of ideas
inattentive

inattentive to external objects; when this train of ideas is disordered by any unexpected stimulus, surprise is excited; as explained in Sect. XVII. 3. 7. and XVIII. 17. then as the sensibility in these cases is greater, fear becomes superadded to the surprise; and convulsions in consequence of the pain of fear. See Sect. XIX. 2.

The proximate cause of surprise is the increased irritation induced by some violent stimulus, which disorders our usual trains of ideas; but in diseases of inirritability the frequent starting or surprise from sounds not uncommon, but rather louder than usual, as the clapping of a door, shews, that the attention of the patient to a train of sensitive ideas was previously stronger than natural, and indicates an incipient delirium; which is therefore worth attending to in febrile diseases.

ORDO II.

Decreased Irritation.

GENUS I.

With decreased Action of the Sanguiferous System.

THE reader should be here apprized, that the words strength and debility, when applied to animal motions, may properly express the quantity of resistance such motions may overcome; but that, when they are applied to mean the susceptibility or insusceptibility of animal fibres to motion, they become metaphorical terms; as in Sect. XII. 2. 1. and would be better expressed by the words activity and inactivity.

There are three sources of animal inactivity; first, the defect of the natural quantity of stimulus on those fibres, which have been accustomed to perpetual stimulus; as the arterial and secerning systems. When their accustomed stimulus is for a while intermitted, as when snow is applied to the skin of the hands, an accumulation of sensorial power is produced; and then a degree of stimulus, as of heat, somewhat greater than that at present applied, though much less than the natural quantity, excites the vessels of the skin into violent action. We must observe, that a deficiency of stimulus in those fibres, which are not subject to perpetual stimulus, as the locomotive muscles, is

not

not succeeded by accumulation of sensorial power; these therefore are more liable to become permanently inactive after a diminution of stimulus; as in strokes of the palsy, this may be called inactivity from defect of stimulus.

2. A second source of animal inactivity exists, when the sensorial power in any part of the system has been previously exhausted by violent stimuli; as the eyes after long exposure to great light; or the stomach, to repeated spirituous potation; this may be termed inactivity from exhaustion of sensorial power. See Sect. XII. 2. 1.

3. But there is a third source of inactivity owing to the deficient production of sensorial power in the brain; and hence stimuli stronger than natural are required to produce the accustomed motions of the arterial system; in this case there is no accumulation of sensorial power produced; as in the inactivity owing to defect of stimulus; nor any previous exhaustion of it, as in the inactivity owing to excess of stimulus.

This third kind of inactivity causes many of the diseases of this genus; which are therefore in general to be remedied by such medicines as promote a greater production of sensorial power in the brain; as the incitantia, consisting of wine, beer and opium, in small repeated quantities; and secondly of such as simply stimulate the arterial and glandular system into their natural actions; as small repeated blisters, spices and essential oils.

And

And lastly the sorbentia, which contribute to supply the more permanent strength of the system, by promoting the absorption of nourishment from the stomach and intestines; and of the superfluous fluid, which attends the secretions.

SPECIES.

1. *Febris inirritativa*. Inirritative fever. This is the typhus mitior, or nervous fever of some writers; it is attended with weak pulse without inflammation, or symptoms of putridity, as they have been called. When the production of sensorial power in the brain is less than usual, the pulse becomes quick as well as weak; and the heart sometimes trembles like the limbs of old age, or of enfeebled drunkards; and when this force of the contractions of the heart and arteries is diminished, the blood is pushed on with less energy, as well as in less quantity, and thence its stimulus on their sides is diminished in a duplicate ratio. In compressions of the brain, as in apoplexy, the pulse becomes slower and fuller; for in that disease, as in natural sleep, the irritative motions of the heart and arteries are not diminished, volition alone is suspended or destroyed.

If the absorption of the terminations of the veins is not equally impaired with the force of the heart and arteries, the blood is taken up by
the

the veins the instant it arrives at their extremities; the capillary vessels are left empty, and there is less resistance to the current of the blood from the arteries; hence the pulse becomes empty, as well as weak and quick; the veins of the skin are fuller than the arteries of it; and its appearance becomes pale, bluish, and shrunk. See Class II.

I. 3. 1.

When this pulse persists many hours, it constitutes the febris inirritativa, or typhus, or nervous fever, of some writers; it is attended with little heat, the urine is generally of a natural colour, though in less quantity; with great prostration of strength, and much disturbance of the faculties of the mind. Its immediate cause seems to be a deficient secretion of the sensorial power from the inaction of the brain; hence almost the whole of the sensorial power is expended in the performance of the motions necessary to life, and little of it can be spared for the voluntary actions of the locomotive muscles, or organs of sense, see Class I. 2. 5. 3. Its more remote cause may be from a paralysis or death of some other part of the body; as of the spleen, when a tumour is felt on the left side, as in some intermittents; or of the kidneys, when the urine continues pale and in small quantity. Does the revivescence of these affected parts, or their torpor, recurring at intervals, form the paroxysms of these fevers? and

their permanent revivescence establish the cure? See Class IV. 2. 1. 19.

The inirritative fever differs from the puerperal and from the hectic fever, by the permanent inactivity of the stomach, which in this disease admits of no solid nutriment. See Class II. 1. 6. 16. and Suppl. I. 12.

M. M. Wine and opium in small quantities repeated every three hours alternately; small repeated blisters; warm but fresh air; sorbentia; nutrientia; transfusion of blood. Small electric shocks passed through the brain in all directions. Oxygene air?

2. *Paresis inirritativa*. Inirritative debility. A defective action of the irritative motions without increase of the frequency of the pulse. It continues three or four weeks like a fever, and then either terminates in health, or the patient sinks into one kind of apoplexy, and perishes. Many symptoms, which attend inirritative fevers, accompany this disease, as cold hands and feet at periodic times, scurf on the tongue, want of appetite, muddy urine, with pains of the head, and sometimes vertigo, and vomiting.

This disease differs from the inirritative fever by the pulse not being more frequent than in health. The want of appetite and of digestion is a principal symptom, and probably is the cause of the

universal debility, which may be occasioned by the want of nourishment. The vertigo is a symptom of inirritability, as shewn in Class IV. 1. 2. 6. the muddy urine is owing to increased absorption from the bladder in consequence of the diminished cutaneous and cellular absorption, as in anasarca, explained in Sect. XXIX. 5. 1. and is therefore a consequence of the inirritability of that part of the system; the foul tongue is owing to an increased absorption of the thinner part of the mucus in consequence of the general deficiency of fluid, which should be absorbed by the skin and stomach. The sickness is owing to decreased action of the stomach, which is probably the primary disease, and is connected with the vertigo.

M. M. An emetic. Calomel, grains iv. once or twice. Then a blister. Peruvian bark. Valerian. Columbo. Steel. Opium and wine in small quantities, repeated alternately every three hours. Small electric percussions through the stomach.

3. *Somnus interruptus*. Interrupted sleep. In some fevers, where the inirritability is very great, when the patient falls asleep, the pulse in a few minutes becomes irregular, and the patient awakes in great disorder, and fear of dying, refusing to sleep again from the terror of this uneasy sensation. In this extreme debility there is reason to believe, that some voluntary power during our waking

hours is employed to aid the irritative stimuli in carrying on the circulation of the blood through the lungs; in the same manner as we use voluntary exertions, when we listen to weak sounds, or wish to view an object by a small light; in sleep volition is suspended, and the deficient irritation alone is not sufficient to carry on the pulmonary circulation. This explanation seems the most probable one, because in cases of apoplexy the irritative motions of the arterial system do not seem to be impaired, nor in common sleep. See Incubus III. 2. 1. 13.

M. M. Opium in very small doses, as three drops of laudanum. A person should watch the patient, and awaken him frequently; or he should measure the time between slumber and slumber, by a stop-watch, and awaken the patient a little before he would otherwise awake; or he should keep his finger on the pulse, and should forcibly awaken him, as soon as it becomes irregular, before the disorder of the circulation becomes so great as to disturb him. See Class I. 2. 1. 9. and Sect. XXVII. 2.

4. *Syncope.* Fainting consists in the decreased action of the arterial system; which is sometimes occasioned by defect of the stimulus of distention, as after venesection, or tapping for the dropsy. At other times it arises from great emotions of the mind, as in sudden joy or grief. In these cases

the whole sensorial power is exerted on these interesting ideas, and becomes exhausted. Thus during great surprise or fear the heart stops for a time, and then proceeds with throbbing and agitation; and sometimes the vital motions become so deranged, as never to recover their natural successive action; as when children have been frightened into convulsions. See Sect. XII. 7. 1.

Miss —, a young lady of Stafford, in travelling in a chaise was so affected by seeing the fall of a horse and postillion, in going down a hill, though the carriage was not overturned, that she fainted away, and then became convulsed, and never spoke afterwards; though she lived about three days in successive convulsions and stupor.

5. *Hæmorrhagia venosa*. A bleeding from the capillaries arising from defect of venous absorption, as in some of those fevers commonly termed putrid. When the blood stagnates in the cellular membrane, it produces petechiæ from this torpor or paralysis of the absorbent mouths of the veins. It must be observed, that those people who have diseased livers, are more liable to this kind of hæmorrhages, as well as to the hæmorrhagia arteriosa; the former, because patients with diseased livers are more subject to paralytic complaints in general, as to hemiplegia, and to dropsy, which is a paralysis of the lymphatics; and the latter is probably owing to the delay of the circulation in

the vena porta by the torpor of this hepatic vessel, when the liver is not much enlarged; and to its pressure on the vena cava, when it is much enlarged.

I have seen two elderly men, and one middle aged woman, all of whom had drunk too much fermented or spirituous liquors, and had been for some months gradually sinking, were seized with a ceaseless hæmorrhage from their mouths, and from every part of the skin, where they happened to scratch themselves, which continued some days till they died. See Sect. XXVII. 2.

M. M. Vitriolic acid, opium, steel, bark. Sponge bound on the part. Steel dissolved in spirit of wine externally. Flour.

6. *Hæmorrhoids cruenta*. In the bleeding piles the capillary vessels of the rectum become distended and painful from the defect of the venous absorption of the part, and at length burst; or the mucous glands are so dilated as to give a passage to the blood; it is said to observe lunar periods.

M. M. Venesection, poultices, cathartics, spice, cold bath, and forbentia. External compression by applying lint, sponge, or cotton. Internal compression by applying a bit of candle smeared with mercurial ointment. Strangulate the tumid piles with a silk string. Cut them off. See Sect. XXVII. 2.

Mrs.

Mrs. — had for twelve or fifteen years, at intervals of a year or less, a bleeding from the rectum without pain; which however stopped spontaneously after she became weakened, or by the use of injections of brandy and water. Lately the bleeding continued above two months, in the quantity of many ounces a day, till she became pale and feeble to an alarming degree. Injections of solutions of lead, of bark and salt of steel, and of turpentine, with some internal astringents, and opiates, were used in vain. An injection of the smoke of tobacco, with ten grains of opium mixed with the tobacco, was used, but without effect the two first times on account of the imperfection of the machine; on the third time it produced great sickness, and vertigo, and nearly a fainting fit; from which time the blood entirely stopped. Was this owing to a fungous excrescence in the rectum; or to a blood-vessel being burst from the difficulty of the blood passing through the vena porta from some hepatic obstruction, and which had continued to bleed so long? Was it stopped at last by the fainting fit? or by the stimulus of the tobacco?

7. *Hæmorrhagia renum.* Hæmorrhage from the kidneys, when attended with no pain, is owing to defect of venous absorption in the kidney. When attended with pain on motion, it is owing to a bit of gravel in the ureter or pelvis of the kidney;

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which

which is a much more frequent disease than the former. See Sect. XXVII. 1.

M. M. 1. Venesection in small quantity, calomel, bark, steel, an opiate; cold immersion up to the navel, the upper part of the body being kept clothed. Neville-Holt water. 2. Alcalized water aerated. Much diluent liquids. Cool dress. Cool bed-room.

Cows are much subject to bloody urine, called foul water by the farmers; in this disease about sixty grains of opium with or without as much rust of iron, given twice a day, in a ball mixed with flour and water, or dissolved in warm water, or warm ale, are, I believe, an efficacious remedy, to which however should be added about two quarts of barley or oats twice a day, and a cover at night, if the weather be cold.

8. *Hæmorrhagia hepatis*. Hæmorrhage from the liver. It sometimes happens in those, who have the gutta rosea, or paralytic affections owing to diseased livers induced by the potation of fermented liquors, that a great discharge of black viscid blood occasionally comes away by stool, and sometimes by vomiting: this the ancients called melancholia, black bile. If it was bile, a small quantity of it would become yellow or green on dilution with warm water, which was not the case in one experiment which I tried; it must remain some
time

time in the intestines from its black colour, when it passes downwards, and probably comes from the bile-ducts, and is often a fatal symptom. When it is evacuated by vomiting it is less dangerous, because it shews greater remaining irritability of the intestinal canal, and is sometimes salutary to those who have diseased livers.

Two elderly men, who had lost their appetite for animal food, which is always a dangerous symptom, when it occurs to those who have drunk too much fermented liquor, observed, that they parted with black stools. One of them also had the mucus of his nostrils occasionally stained with blood. The black stools appeared evidently to consist of the coagulum of blood, sometimes without other feces. After a few weeks, they both sunk under this discharge, which I supposed to proceed from the liver, as it never appeared florid in any part of it. See Section XXVII. 2.

M. M. An emetic. Rhubarb, steel, wine, bark, opium.

9. *Hæmoptoe venosa*. Venous hæmoptoe frequently attends the beginning of the hereditary consumptions of dark-eyed people; and in others, whose lungs have too little irritability. These spittings of blood are generally in very small quantity, as a tea-spoonful; and return at first periodically, as about once a month; and are less dangerous in the female than in the male sex; as in
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the former they are often relieved by the natural periods of the menses. Many of these patients are attacked with this pulmonary hæmorrhage in their first sleep; because in feeble people the power of volition is necessary, besides that of irritation, to carry on respiration perfectly; but, as volition is suspended during sleep, a part of the blood is delayed in the vessels of the lungs, and in consequence effused, and the patient awakes from the disagreeable sensation. See Class I. 2. 1. 3. II. 1. 6. 6. III. 2. 1. 10. and Sect. XXVII. 2.

M. M. Wake the patient every two or three hours by an alarum clock. Give half a grain of opium at going to bed, or twice a day. Onions, garlic, slight chalybeates. Issues. Leeches applied once a fortnight or month to the hemorrhoidal veins to produce a new habit. Emetics after each period of hæmoptoe, to promote expectoration, and dislodge any effused blood, which might by remaining in the lungs produce ulcers by its putridity. A hard bed, to prevent too sound sleep. A periodical emetic or cathartic once a fortnight.

10. *Palpitatio cordis.* The palpitation of the heart frequently attends the hæmoptoe above mentioned; and consists in an ineffectual exertion of the heart to push forwards its contents in due time, and with due force. The remote cause is frequently

quently some impediment to the general circulation; as the torpor of the capillaries in cold paroxysms of fever, or great adhesions of the lungs. At other times it arises from the debility of the action of the heart owing to the deficient sensorial power of irritation or of association, as at the approach of death.

In both these cases of weak exertion the heart feels large to the touch, as it does not completely empty itself at each contraction; and on that account contracts more frequently, as described in Sect. XXXII. 2. 2. Another kind of palpitation may sometimes arise from the retrograde motions of the heart, as in fear. See Class I. 3. 1. 2. and IV. 3. 1. 6.

11. *Menorrhagia*. Continued flow of the catamenia. The monthly effusion of blood from the uterus or vagina is owing to a torpor of the veins of those membranes in consequence of the defect of venereal stimulus; and in this respect resembles the mucus discharged in the periodical venereal orgasm of the female quadrupeds, which are secluded from the males. The menorrhagia, or continued flow of this discharge, is owing to a continued defect of the venous absorption of the membranes of the uterus or vagina. See Class IV. 2. 4. 7.

M. M. Venesection in small quantity. A cathartic. Then opium, a grain every night. Steel.
Bark.

Bark. A blister. Topical asperſion with cold water, or cold vinegar.

One cauſe of exceſſive menſtruation, which ſometimes recurs monthly, and continues for a fortnight at each period, and is ſucceeded by fluor albus during the intervals, I have ſuſpected to ariſe, like the bleeding piles, from enlargement of the liver, which is liable to occur about the age of forty to thoſe who have drank much ſtrong ſmall beer, or wine; or to thoſe who have unfortunately been long accuſtomed to the uſe of tight ſtays, or other bandages round their bowels. In theſe ſituations 6 or 8 grains of rhubarb ſhould be taken every night for months, or even years. Calomel, 4 or 6 grains ſhould be taken as a cathartic one a month. A flannel drefs on the legs, thighs, and lower body may be uſeful in the cold ſeaſon, but injurious in the warmer months. Weak acid of vitriol ten drops, two or three times a day; ſteel in very ſmall quantity; and a very looſe drefs round the body; are recommended.

12. *Dyſmenorrhagia*. A difficulty of menſtruation attended with pain. In this complaint the torpor of the uterine veſſels, which precedes menſtruation, is by ſympathy accompanied with a torpor of the lumbar membranes, and conſequent pain; and frequently with cold extremities, and general debility. The ſmall quantity and difficulty of the diſcharge is owing to arterial inactivity,

activity, as in chlorosis. Whence it happens, that chalybeate medicines are of efficacy both to stop or prevent too great menstruation, and to promote or increase deficient menstruation; as the former is owing to inirritability of the veins, and the latter of the arteries of the uterus. See Article IV. 2. 6. in the *Materia Medica*.

M. M. Opium, steel, pediluvium. Warm bath.

13. *Lochia nimia*. Too great discharge after delivery. In that unnatural practice of some hasty accoucheurs of introducing the hand into the uterus immediately after the delivery of the child, and forcibly bringing away the placenta, it frequently happens, that a part of it is left behind; and the uterus, not having power to exclude so small a portion of it, is prevented from complete contraction, and a great hæmorrhage ensues. In This circumstance a bandage with a thick compress on the lower part of the belly, by appressing the sides of the uterus on the remaining part of the placenta, is likely to check the hæmorrhage, like the application of a pledget of any soft substance on a bleeding vessel.

In other cases the lochia continues too long, or in too great quantity, owing to the deficiency of venous absorption.

M. M. An enema. An opiate. A blister. Slight chalybeates. Peruvian bark. Cloths dipped

dipped in cold vinegar and applied externally. Bandages on the limbs to keep more blood in them for a time have been recommended.

14. *Abortio spontanea.* Some delicate ladies are perpetually liable to spontaneous abortion, before the third, or after the seventh, month of gestation. From some of these patients I have learnt, that they have awakened with a slight degree of difficult respiration, so as to induce them to rise hastily up in bed; and have hence suspected, that this was a tendency to a kind of asthma, owing to a deficient absorption of blood in the extremities of the pulmonary or bronchial veins; and have concluded from thence, that there was generally a deficiency of venous absorption; and that this was the occasion of their frequent abortion. Which is further countenanced, where a great sanguinary discharge precedes or follows the exclusion of the fetus.

Miscarriages are sometimes induced by what is termed a retroversion of the uterus, in which the fundus uteri is retroverted and pressed down between the rectum and the vagina. This can only occur in the first or second month of gestation, and is generally preceded by a difficulty of making water, and a consequent tumour of the bladder; a violent pain about the perinæum or rectum is thus caused, and a miscarriage is liable to follow. Draw off the urine with a catheter; inject an
enema

enema with sixty drops of tincture of opium, if it can be done. If it recurs frequently after the miscarriage, a wax candle, or a pessary, made by rolling some emplastrum de minio spread on linen, may be introduced into the rectum, and worn as a compress to prevent the return for a few days, till the parts recover their strength. See London Medical Observations, Vol. IV. p. 388. and Dr. Hunter's Tables of the Gravid Uterus.

M. M. Opium, bark, chalybeates in small quantity. Change to a warmer climate. I have directed with success in four cases half a grain of opium twice a day for a fortnight, and then a whole grain twice a day during the whole gestation. One of these patients took besides twenty grains of Peruvian bark for several weeks. By these means being exactly and regularly persisted in, a new habit became established, and the usual miscarriages were prevented.

Miscarriages more frequently happen from eruptive fevers, and from rheumatic ones, than from other inflammatory diseases. I saw a most violent pleurisy and hepatitis cured by repeated venesection about a week or ten days before parturition; yet another lady whom I attended, miscarried at the end of the chicken pox, with which her children were at the same time affected. Miscarriages towards the termination of the small-pox are very frequent, yet there have been a few instances of children, who have been born with the eruption
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on them. The blood in the small pox will not inoculate that disease, if taken before the commencement of the secondary fever; as shewn in Sect. XXXIII. 2. 10. because the contagious matter is not yet formed, but after it has been oxygenated through the cuticle in the pustules, it becomes contagious; and if it be then absorbed, as in the secondary fever, the blood of the mother may become contagious, and infect the child. The same mode of reasoning is applicable to the chicken pox. See Class IV. 3. 1. 7.

15. *Scorbutus*. Sea-scurvy is caused by salt diet, the perpetual stimulus of which debilitates the venous and absorbent systems; and may also be promoted by the sea-air, which is known to be so injurious to most vegetables, which grow near the coasts, and has been perhaps incautiously recommended to consumptive patients. See Class II. 1. 6. 7. Hence the blood is imperfectly taken up by the veins from the capillaries, whence brown and black spots appear upon the skin without fever. The limbs become livid and edematous, and lastly ulcers are produced from deficient absorption. See Sect. XXXIII. 3. 2. and Class II. 1. 4. 13. For an account of the scurvy of the lungs, see Sect. XXVII. 2.

M. M. Fresh animal and vegetable food. Infusion of malt. New beer. Sugar. Wine. Steel. Bark. Sorbentia. Opium?

16. *Vibices*.

16. *Vibices*. Extravasations of blood become black from their being secluded from the air. The extravasation of blood in bruises, or in some fevers, or after death in some patients, especially in the parts which were exposed to pressure, is owing to the fine terminations of the veins having been mechanically compressed so as to prevent their absorbing the blood from the capillaries, or to their inactivity from disease. The blood when extravasated undergoes a chemical change before it is sufficiently fluid to be taken up by the lymphatic absorbents, and in that process changes its colour to green and then yellow.

17. *Petechiæ*. Purple spots. These attend fevers with great venous irritability, and are probably formed by the inability of a single termination of a vein, whence the corresponding capillary becomes ruptured, and effuses the blood into the cellular membrane round the inert termination of the vein. This is generally esteemed a sign of the putrid state of the blood, or that state contrary to the inflammatory one. As it attends some inflammatory diseases which are attended with great irritability, as in the confluent small pox. But it also attends the scurvy, where no fever exists, and it therefore simply announces the inactivity of the terminations of some veins; and is thence indeed a bad symptom in fevers, as a mark of approaching inactivity of the whole sanguiferous system, or

VOL. III. I death.

death. The blue colour of some children's arms or faces in very cold weather is owing in like manner to the torpor of the absorbent terminations of the veins, whence the blood is accumulated in them, and sometimes bursts them. See *Hæmorrhagia venosa*, and Suppl. 1. 2. 7.

In some cases of fever attended with petechiæ, Dr. Hall, of Colchester, directed the body to be washed with cold vinegar and water twice a day, with great advantage. The petechiæ became daily less numerous and less livid, the pulse slower and stronger, with less delirium, and more sleep. He has treated twenty cases in this manner, and not lost one. *Medical Review*, Vol. III. p. 8.

In these cases not only the application of external cold seems to have been of service, by preventing the unnecessary expenditure of animal power; but as the stimulus of vinegar renders the lips pale, when applied externally, and in consequence stimulates the terminations of the veins into greater action; it seems also to have contributed to remove the petechiæ.

18. *Aneurisma*. Aneurism is probably owing to the want of due irritability of a part of the coat of an artery. As living muscles are known to resist disruption more than dead ones, according to the experiments (I think) of Dr. Langrish, it follows that when a part of the coat of an artery ceases to contract by the stimulus of the blood,

blood, that it will soon become distended by the force of it, till it widens into a sack, and at last becomes ruptured.

M. M. Venesection repeatedly in small quantities. Rest. Diluent, mild nutriment. Daily evacuation by a pill consisting of rhubarb eight grains, and soap four grains.

It is possible also, that an aneurism may be produced by the resistance to the circulation, and the force of the heart being greater than the sides of the arteries can counterbalance.

Mr. Gimbernat is said to have cured some cases of aneurism in the popliteal artery by compressing it by means of an adapted machine, consisting of a steel ring above and below the knee, which are joined by a plate, beneath which is placed a proper cushion, which can be pressed on the distended part of the artery more or less by means of a screw. The other method of cure is by a double ligature above the aneurism, as first practised by Mr. J. Hunter.

19. *Varix*. The varix of veins occurs frequently in the legs of women, possibly sometimes from tight garters, and has for its proximate cause the inirritability of the coat of the vein; whence it becomes distended, till it bursts, by the power with which the blood is thrown into it by the absorbent mouths, which take it up from the capillary arteries.

M. M. Tie the vena saphena below the joint of the knee, and the blood will then circulate by the internal veins; and that stopped in the veins beneath the ligature will be absorbed.

The piles may be termed varixes, and may be destroyed by excision or ligature. See Hæmorrhoids.

ORDO II.

Decreased Irritation.

GENUS II.

Decreased Action of the Secerning System.

THESE are always attended with decrease of partial, or of general heat; for as the heat of animal bodies is the consequence of their various secretions, and is perpetually passing away into the ambient air, or other bodies in contact with them; when these secretions become diminished, or cease, the heat of the part or of the whole is soon diminished, or ceases along with them.

SPECIES.

1. *Frigus febrile*. Febrile coldness. There is reason to believe, that the beginning of many fever-fits originates in the quiescence of some part of the absorbent system, especially where they have been owing to external cold; but that, where the coldness of the body is not owing to a diminution of external heat, it arises from the inaction of some part of the secerning system. Hence some parts of the body are hot whilst other parts are cold; which I suppose gave occasion to error in Martyn's Experiments;

periments; where he says, that the body is as hot in the cold paroxysms of fevers as at other times.

After the sensorial power has been much diminished by great preceding activity of the system, as by long continued external heat, or violent exercise, a sudden exposure to much cold produces a torpor both greater in degree and over a greater portion of the system, by subtracting their accustomed stimulus from parts already much deprived of their irritability. Dr. Franklin in a letter to M. Duberge, the French translator of his works, mentions an instance of four young men, who bathed in a cold spring after a day's harvest work; of whom two died on the spot, a third on the next morning, and the other survived with difficulty. Hence it would appear, that those, who have to travel in intensely cold weather, will sooner perish, who have previously heated themselves much with drams, than those who have only the stimulus of natural food; of which I have heard one well attested instance. See Article VII. 2. 3. Class III. 2. 1. 17.

Frigus chronicum. Permanent coldness. Coldness of the extremities, without fever, with dry pale skin, is a symptom of general debility, owing to the decreased action of the arterial system, and of the capillary vessels; whence the perspirable matter is secreted in less quantity, and in consequence the skin is less warm. This coldness is observable at the extremities of the limbs, ears, and nose, more than

than in any other parts : as a larger surface is here exposed to the contact of the air, or clothes, and thence the heat is more hastily carried away.

The pain, which accompanies the coldness of the skin, is owing to the deficient exertion of the subcutaneous vessels, and probably to the accumulation of sensorial power in the extremities of their nerves. See Sect. XII. 5. 3: XIV. 6. XXXII. 3. and Class I. 2. 4. 1.

M. M. A blister. Incitantia, nutrientia, forbentia. Exercise. Clothes. Fire. Joy. Anger.

2. *Pallor fugitivus*. The fugitive paleness, which accompanies the coldness of the extremities, is owing to a less quantity of blood passing through the capillaries of the skin in a given time ; where the absorbent power of the veins is at the same time much diminished, a part of the blood lingers at their junction with the capillary arteries, and a bluish tinge is mixed with the paleness ; as is seen in the loose skin under the eye-lids, and is always a mark of temporary debility. See Class II. 1. 4. 4. Where the paleness of the skin is owing to the deficiency of red globules in the blood, it is joined with a yellowish tinge ; which is the colour of the serum, with which the blood then abounds, as in chlorosis, and in torpor or paralysis of the liver, and is often mistaken for a superabundance of bile.

A permanent paleness of the skin is owing to the coalescence of the minute arteries, as in old age.

See Class I. 2. 2. 9. There is another source of paleness from the increased absorption of the terminations of the veins, as when vinegar is applied to the lips. See Sect. XXVII. 1. and another from the retrograde motions of the capillaries and fine extremities of the arteries. See Class II. 3. 1. 1.

M. M. A blister, nutrientia, incitantia, exercise, oxygene gas.

3. *Pus parcius*. Diminished pus. Dryness of ulcers. In the cold fits of fever all the secretions are diminished, whether natural or artificial, as their quantity depends on the actions of the glands or capillaries, which then share in the universal inaction of the system. Hence the dryness of issues and blisters in great debility, and before the approach of death, is owing to deficient secretion, and not to increased absorption.

M. M. Opium, wine in very small quantities, Peruvian bark.

4. *Mucus parcius*. Diminished mucus. Dryness of the mouth and nostrils. This also occurs in the cold fits of intermittents. In these cases I have also found the tongue cold to the touch of the finger, and the breath to the back of one's hand, when opposed to it, which are very inauspicious symptoms, and generally fatal. In fevers with inirritability it is generally esteemed a good symptom, when the nostrils and tongue become moist after
having

having been previously dry ; as it shews an increased action of the mucous glands of those membranes, which were before torpid. And the contrary to this is the facies Hippocrática, or countenance so well described by Hippocrates, which is pale, cold, and shrunk ; all which are owing to the inactivity of the secreting vessels, the paleness from there being less red blood passing through the capillaries, the coldness of the skin from there being less secretion of perspirable matter, and the shrunk appearance from there being less mucus secreted into the cells of the cellular membrane. See Class IV. 2. 4. 11.

M. M. Blisters. Incitantia.

5. *Urina parvior pallida*. Paucity of pale urine, as in the cold fits of intermittents ; it appears in some nervous fevers throughout the whole disease, and seems to proceed from a palsy of the kidneys ; which probably was the cause of the fever, as the fever sometimes ceases, when that symptom is removed : hence the straw-coloured urine in this fever is so far salutary, as it shews the unimpaired action of the kidneys.

M. M. Balsams, essential oil, asparagus, rhubarb, a blister. Cantharides internally.

6. *Torpor hepaticus*. Paucity of bile from a partial inaction of the liver ; hence the bombycinous colour of the skin, grey stools, urine not yellow, indigestion,

indigestion, debility, followed by tympany, dropfy, and death.

This paralysis or inirritability of the liver often destroys those who have been long habituated to much fermented liquor, and have suddenly omitted the use of it. It also destroys plumbers and house-painters, and in them seems a substitute for the *colica faturnina*. See Sect. XXX.

M. M. Aloe and calomel, then the bark, and chalybeates. Mercurial ointment rubbed on the region of the liver. Rhubarb, three or four grains, with opium half a grain to a grain twice a day. Equitation, warm bath for half an hour every day.

7. *Torpor pancreatis*. Torpor of the pancreas. I saw what I conjectured to be a tumour of the pancreas with indigestion, and which terminated in the death of the patient. He had been for many years a great consumer of tobacco, insomuch that he chewed that noxious drug all the morning, and smoaked it all the afternoon. As the secretion from the pancreas resembles saliva in its general appearance, and probably in its office of assisting digestion, by preventing the fermentation of the aliment; as would appear by the experiments of Pringle and Macbride; there is reason to suspect, that a sympathy may exist between the salivary and pancreatic glands; and that the perpetual stimulus of the former by tobacco might in process of time injure the latter. See Tobacco, Article III. 2. 2.

8. *Torpor*

8. *Torpor renis*. Inirritability or paralysis of the kidneys is probably frequently mistaken for gravel in them. Several, who have lived rather intemperately in respect to fermented or spirituous liquors, become suddenly seized about the age of sixty, or later, with a total stoppage of urine; though they have previously had no symptoms of gravel. In these cases there is no water in the bladder; as is known by the introduction of the catheter, of which those made of elastic gum are said to be preferable to metallic ones; or it may generally be known by the shape of the abdomen, either by the eye or hand. Bougies and catheters of elastic gum are sold at No. 37, Red Lion-street, Holborn, London.

M. M. Electric shocks, warm bath. Emetics. See calculus renis, Class I. 1. 3. 9. When no gravel has been previously observed, and the patient has been a wine-drinker rather than an ale-drinker, the case is generally owing to inirritability of the tubuli uriniferi, and is frequently fatal. See Class I. 2. 4. 20.

9. *Punctæ mucosæ vultûs*. Mucous spots on the face. These are owing to the inactivity of the excretory ducts of the mucous glands; the thinner part of this secretion exhales, and the remainder becomes inspissated, and lodges in the duct; the extremity of which becomes black by exposure to the air.

M. M. They.

M. M. They may be pressed out by the fingernails. Warm water. Ether frequently applied. Blister on the part?

10. *Maculæ cutis fulvæ*. Morpew or freckles. Tawny blotches on the skin of the face and arms of elderly people, and frequently on their legs after slight erysipelas. The freckles on the face of younger people, who have red hair, seem to be a similar production, and seem all to be caused by the coalescence of the minute arteries or capillaries of the part. In a scar after a wound the integument is only opaque; but in these blotches, which are called morpew and freckles, the small vessels seem to have become inactive with some of the serum of the blood stagnating in them, from whence their colour. See Class III. 1. 2. 12.

M. M. Warm bathing. A blister on the part?

11. *Canities*. Grey hair. In the injection of the vessels of animals for the purposes of anatomical preparations, the colour of the injected fluid will not pass into many very minute vessels; which nevertheless uncoloured water, or spirits, or quicksilver, will permeate. The same occurs in the filtration of some coloured fluids through paper, or very fine sand, where the colouring matter is not perfectly dissolved, but only diffused through the liquid. This has led some to imagine, that the cause of the whiteness of the hair in elderly people
may

may arise from the diminution, or greater tenuity, of the glandular vessels, which secrete the mucus, which hardens into hair; and that the same difference of the tenuity of the secreting vessels may possibly make the difference of colour of the silk from different silk-worms, which is of all shades from yellow to white.

But as the secreted fluids are not the consequence of mechanical filtration, but of animal selection; we must look out for another cause, which must be found in the decreasing activity of the glands, as we advance in life; and which affects many of our other secretions as well as that of the mucus, which forms the hair. Hence grey hairs are produced on the faces of horses by whatever injures the glands at their roots, as by corrosive blisters; and frequently on the human subject by external injuries on the head; and sometimes by fevers. And as the grey colour of hair consists in its want of transparency, like water converted into snow; there is reason to suppose, that a defect of secreted moisture simply may be the cause of this kind of opacity, as explained in Cataracts, Class I. 2. 2. 13.

M. M. Whatever prevents the inirritability and insensibility of the system, that is, whatever prevents the approach of old age, will so far counteract the production of grey hairs, which is a symptom of it. For this purpose in people, who are not corpulent, and perhaps in those who are so, the

warm bath twice or thrice a week is particularly serviceable. See Sect. XXXIX. 5. 1. on the colours of animals, and Class I. 1. 2. 15.

As mechanical injury from a percussion, or a wound, or a caustic, is liable to occasion the hair of the part to become grey; so I suspect the compression of parts against each other of some animals in the womb is liable to render the hair of those parts of a lighter colour; as seems often to occur in black cats and dogs. A small terrier bitch now stands by me, which is black on all those parts, which were external, when she was wrapped up in the uterus, *teres atque rotunda*; and those parts white, which were most constantly pressed together; and those parts tawny, which were generally but less constantly pressed together. Thus the hair of the back from the forehead to the end of the tail is black, as well as that of the sides, and external parts of the legs, both before and behind.

As in the uterus the chin of the whelp is bent down, and lies in contact with the fore part of the neck and breast; the tail is applied close against the division of the thighs behind; the inside of the hinder thighs are pressed close to the sides of the belly, all these parts have white hairs.

The fore-legs in the uterus lie on each side of the face; so that the feet cover part of the temples, and compress the prominent part of the upper eye-brows, but are so placed as to defend the
eye-

eye-balls from pressure; it is curious to observe, that the hair of the sides of the face, and of the prominent upper eye-brows, are tawny, and of the inside of the feet and legs, which covered them; for as this posture admitted of more change in the latter weeks of gestation, the colour of these parts is not so far removed from black, as of those parts, where the contact or compression was more uniform.

Where this uterine compression of parts has not been so great as to render the hair white in other animals, it frequently happens, that the extremities of the body are white, as the feet, and nose, and tips of the ears of dogs and cats and horses, where the circulation is naturally weaker; whence it would seem, that the capillary glands, which form the hair, are impeded in the first instance by compression, and in the last by the debility of the circulation in them. See Class I. 1. 2. 15.

This day, August 8th, 1794, I have seen a negro, who was born (as he reports) of black parents, both father and mother, at Kingston in Jamaica, who has many large white blotches on the skin of his limbs and body; which I thought felt not so soft to the finger, as the black parts. He has a white divergent blaze from the summit of his nose to the vertex of his head; the upper part of which, where it extends on the hairy scalp, has thick curled hair, like the other part of his head, but quite white. By these marks I supposed him
to

to be the same black, who is described, when only two years old, in the Transactions of the American Philosophical Society, Vol. II. page 292, where a female one is likewise described with nearly similar marks.

The joining of the frontal bones, and the bregma, having been later than that of the other futures of the cranium, probably gave cause to the whiteness of the hair on these parts by delaying or impeding its growth.

12. *Callus*. The callous skin on the hands and feet of laborious people is owing to the extreme vessels coalescing from the perpetual pressure they are exposed to.

As we advance in life, the finer arteries lose their power of action, and their sides grow together; hence the paleness of the skins of elderly people, and the loss of that bloom, which is owing to the numerous fine arteries, and the transparency of the skin, that encloses them.

M. M. Warm bath. Paring the thick skin with a knife. Smoothing it with a pumice stone. Cover the part with oiled silk to prevent the evaporation of the perspirable matter, and thus to keep it moist.

13. *Cataracta* is an opacity of the crystalline lens of the eye. It is a disease of light-coloured eyes, as the gutta serena is of dark ones. On cutting

ting off with sciffars the cornea of a calf's eye, and holding it in the palm of one's hand, so as to gain a proper light, the artery, which supplies nutriment to the cryftalline humour, is easily and beautifully seen ; as it rises from the centre of the optic nerve through the vitreous humour to the cryftalline. It is this point, where the artery enters the eye through the cineritious part of the optic nerve, (which is in part near the middle of the nerve,) which is without sensibility to light ; as is shewn by fixing three papers, each of them about half an inch in diameter, against a wall about a foot distant from each other, about the height of the eye ; and then looking at the middle one, with one eye, and retreating till you lose sight of one of the external papers. Now as the animal grows older, the artery becomes less visible, and perhaps carries only a transparent fluid, and at length in some subjects I suppose ceases to be pervious ; then it follows, that the cryftalline lens, losing some fluid, and gaining none, becomes dry, and in consequence opaque ; for the same reason, that wet or oiled paper is more transparent than when it is dry, as explained in Class I. 1. 4. 1. The want of moisture in the cornea of old people, when the exhalation becomes greater than the supply, is the cause of its want of transparency ; and which like the cryftalline gains rather a milky opacity. The same analogy may be used to explain the whiteness of the hair of old

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people, which loses its pellucidity along with its moisture. See Class I. 2. 2. 11.

M. M. Small electric shocks through the eye. A quarter of a grain of corrosive sublimate of mercury dissolved in brandy, or taken in a pill, twice a day for six weeks. Couching by depression, or by extraction. The former of these operations is much to be preferred to the latter, though the latter is at this time so fashionable, that a surgeon is almost compelled to use it, lest he should not be thought an expert operator. For depressing the cataract is attended with no pain, no danger, no confinement, and may be as readily repeated, if the crystalline should rise again to the centre of the eye. The extraction of the cataract is attended with considerable pain, with long confinement, generally with fever, always with inflammation, and frequently with irreparable injury to the iris, and consequent danger to the whole eye. Yet has this operation of extraction been trumpeted into universal fashion for no other reason but because it is difficult to perform, and therefore keeps the business in the hands of a few empirics, who receive larger rewards, regardless of the hazard, which is encountered by the flattered patient.

A friend of mine returned yesterday from London after an absence of many weeks; he had a cataract in a proper state for the operation, and in spite of my earnest exhortation to the contrary, was prevailed upon to have it extracted rather than depressed.

depressed. He was confined to his bed three weeks after the operation, and is now returned with the iris adhering on one side so as to make an oblong aperture; and which is nearly, if not totally, without contraction, and thus greatly impedes the little vision, which he possesses. Whereas I saw some patients cured by depression many years ago by a then celebrated empiric, Chevalier Taylor, who were not confined above a day or two, that the eye might gradually be accustomed to light, and who saw as well as by extraction, perhaps better, without either pain, or inflammation, or any hazard of losing the eye.

As the inflammation of the iris is probably owing to forcing the crystalline through the aperture of it in the operation of extracting it, could it not be done more safely by making the opening behind the iris and ciliary process into the vitreous humour? but the operation would still be more painful, more dangerous, and not more useful than that by depressing it.

If extraction of the crystalline be used, Dr. Reimarus of Hamburgh advises to drop into the eye previous to the operation, some extract of belladonna dissolved in water, which he has found to produce a temporary paralysis of the retina, and thence a total inaction of the iris, so that it remains perfectly expanded, and is thence less liable to be injured by the operation, and the eye perhaps less

liable to inflammation. Might not this be of advantage in some ophthalmies?

14. *Innutritio ossium.* Innutrition of the bones. Not only the blood effused in vibices and petechiæ, or from bruises, as well as the blood and new vessels in inflamed parts, are reabsorbed by the increased action of the lymphatics; but the harder materials, which constitute the fangs of the first set of teeth, and the ends of exfoliating bones, and sometimes the matter of chalk-stones in the gout, the coagulable lymph, which is deposited on the lungs, or on the muscles after inflammation of those parts, and which frequently produces difficulty of breathing, and the pains of chronic rheumatism, and lastly the earthy part of the living bones are dissolved and absorbed by the increased actions of this system of vessels. See Sect. XXXIII. 3. 1.

The earthy part of bones in this disease of the nutrition of them seems to suffer a solution, and reabsorption; while the secreting vessels do not supply a sufficient quantity of calcareous earth and phosphoric acid, which constitute the substance of bones. As calcareous earth abounds every where, is the want of phosphoric acid the remote cause? One cause of this malady is given in the Philosophic Transactions, where the patient had been accustomed to drink large quantities of vinegar. Two cases are described by Mr. Gouch. In one case,

case, which I saw, a considerable quantity of calcareous earth, and afterwards of bone-ashes, and of decoction of madder, and also of sublimate of mercury, were given without effect. All the bones became soft, many of them broke, and the patient seemed to die from the want of being able to distend her chest owing to the softness of the ribs.

M. M. Salt of urine, called sal microcosmicum, phosphorated soda. Calcined hartshorn. Bone-ashes. Hard or petrifying water, as that of Matlock, or such as is found in all limestone or marly countries. The calcareous earth in these waters might possibly be carried to the bones, as madder is known to colour them. Warm bath. Volatile or fixed alkali as a lotion on the spine, or essential oils.

The innutrition of the bones is often first to be perceived by the difficulty of breathing and palpitation of the heart on walking a little faster than usual, which I suppose is owing to the softness of the ends of the ribs adjoining to the sternum; on which account they do not perfectly distend the chest, when they are raised by the pectoral and intercostal muscles with greater force than usual. After this the spine becomes curved both by the softness of its vertebræ, and for the purpose of making room for the disturbed heart. See Species 16 of this Genus.

As these patients are pale and weak, there would

seem to be a deficiency of oxygene in their blood, and in consequence a deficiency of phosphoric acid; which is probably produced by oxygene in the act of respiration.

Mr. Bonhome, in the Chemical Annals, August, 1793, supposes the rickets to arise from the prevalence of vegetable or acetous acid, which is known to soften bones out of the body. Mr. Dettaen seems to have espoused a similar opinion, and both of them in consequence give alcalies and testacea. If this theory was just, the soft bones of such patients should shew evident marks of such acidity after death; which I believe has not been observed. Nor is it analogous to other animal facts, that nutritious fluids secreted by the finest vessels of the body should be so little animalized, as to retain acetous or vegetable acidity.

The success attending the following case in so short a time as a fortnight I ascribed principally to the use of the warm bath; in which the patient continued for full half an hour every night, in the degree of heat, which was most grateful to her sensation, which might be I suppose about 94. Miss —, about ten years of age, and very tall and thin, has laboured under palpitation of her heart, and difficult breathing on the least exercise, with occasional violent dry cough, for a year or more, with dry lips, little appetite either for food or drink, and dry skin, with cold extremities. She has at times been occasionally worse, and been relieved

relieved in some degree by the bark. She began to bend forwards, and to lift up her shoulders. The former seemed owing to a beginning curvature of the spine, the latter was probably caused to facilitate her difficult respiration.

M. M. She used the warm bath, as above related; which by its warmth might increase the irritability of the smallest series of vessels, and by supplying more moisture to the blood might probably tend to carry further the materials, which form calcareous or bony particles, or to convey them in more dilute solution. She took twice a day twenty grains of extract of bark, twenty grains of soda phosphorata, and ten grains of chalk, and ten of calcined hartshorn mixed into a powder with ten drops of laudanum; with flesh food both to dinner and supper; and port wine and water instead of the small beer she had been accustomed to; she lay on a sofa frequently in a day, and occasionally used a neck-swing.

There is no situation, where the softness of the bones and consequent deformity of them is so frequently attended with calamitous consequences, as when it affects the bones of the pelvis, so as to contract the form of it; whence many unfortunate women have lost their infants, or perished themselves. In this miserable situation of the pregnant uterus, some have destroyed the child, others have undergone the Cæsarean operation, and have thence generally perished themselves. But Dr. Denman

has ingeniously introduced a new practice, which has saved, in such cases, both the mother and child; which is by promoting a premature delivery between the seventh and eighth months, before the child has acquired its full growth, which has been attended with success. See Denman's Midwifery, and Medical Journal, Vol. III. No. 11.

In one instance, nature seems to have had a similar expedient, and perhaps to overcome a similar difficulty, in the premature birth of the progeny of the kangaroo; whose young are excluded from the uterus in a very early state of their growth, and received into an exterior bag; which is furnished with teats, to which they long adhere by their mouths, till they are ready for a second birth.

15. *Rachitis*. Rickets. The head is large, protuberant chiefly on the forepart. The smaller joints are swelled; the ribs depressed; the belly tumid, with other parts emaciated. This disease from the innutrition or softness of the bones arose about two centuries ago; seems to have been half a century in an increasing or spreading state; continued about half a century at its height, or greatest diffusion; and is now nearly vanished: which gives reason to hope, that the small-pox, measles, and venereal disease, which are all of modern production, and have already become milder, may in process of time vanish from the earth, and

perhaps be succeeded by new ones ! See the preceding Species.

16. *Spinæ distortio*. Distortion of the spine is another disease originating from the innutrition or softness of the bones. I once saw a child about six years old with palpitation of heart, and quickness of respiration, which began to have a curvature of the spine ; I then doubted, whether the palpitation and quick respiration were the cause or consequence of the curvature of the spine ; suspecting either that nature had bent the spine outwards to give room to the enlarged heart ; or that the malformation of the chest had compressed and impeded the movements of the heart. But a few weeks ago on attending a young lady about ten years old, whose spine had lately begun to be distorted, with very great difficulty and quickness of respiration, and alarming palpitation of the heart, I convinced myself, that the palpitation and difficult respiration were the effect of the change of the cavity of the chest from the distortion of the spine ; and that the whole was therefore a disease of the innutrition or softness of the bones.

For on directing her to lie down much in the day, and to take the bark, the distortion became less, and the palpitation and quick respiration became less at the same time. After this observation a neck-swing was directed, and she took the bark,

bark, madder, and bone-ashes; and she continues to amend both in her shape and health.

Delicate young ladies are very liable to become awry at many boarding-schools. This is occasioned principally by their being obliged too long to preserve an erect attitude, by sitting on forms many hours together. To prevent this, the school-seats should have either backs, on which they may occasionally rest themselves; or desks before them, on which they may occasionally lean. This is a thing of greater consequence than may appear to those, who have not attended to it.

When the least tendency to become awry is observed, they should be advised to lie down on a bed or sofa for an hour in the middle of the day for many months; which generally prevents the increase of this deformity by taking off for a time the pressure on the spine of the back, and it at the same time tends to make them grow taller. Young persons, when nicely measured, are found to be half an inch higher in a morning than at night; as is well known to those who enlist very young men for soldiers. This is owing to the cartilages between the bones of the back becoming compressed by the weight of the head and shoulders on them during the day. It is the same pressure which produces curvatures and distortions of the spine in growing children, where the bones are softer than usual; and which may thus be relieved

by an horizontal posture for an hour in the middle of the day, or by being frequently allowed to lean on a chair, or to play on the ground on a carpet.

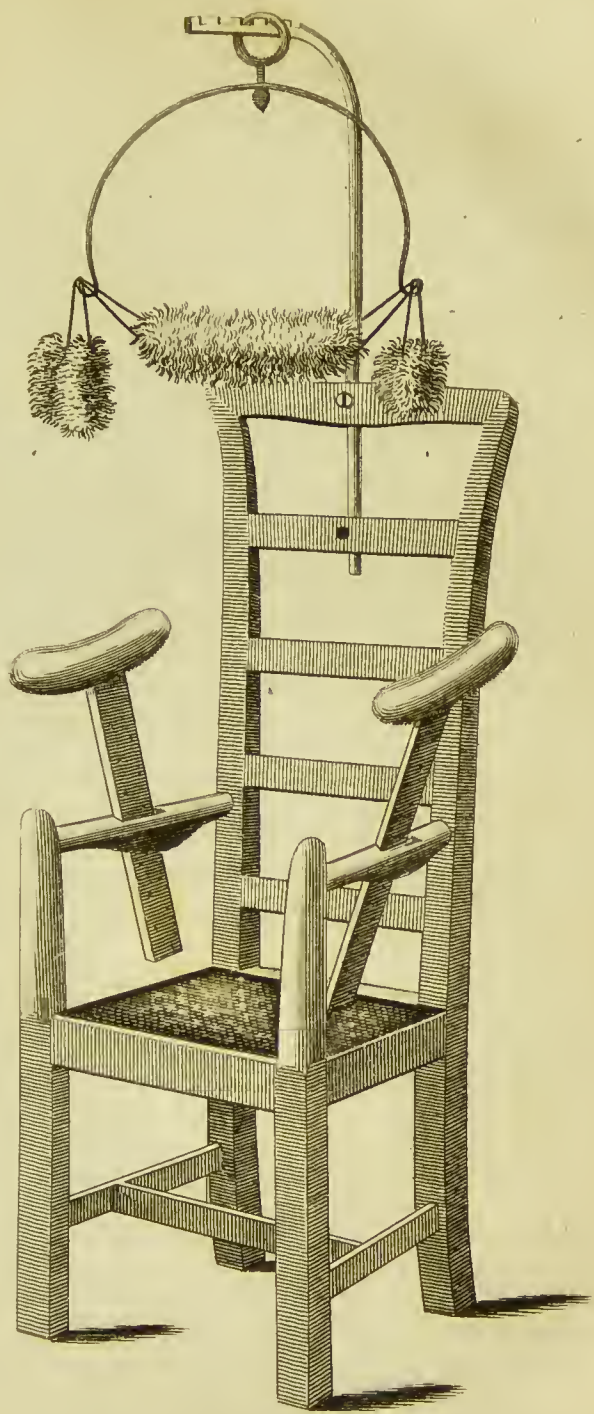
Young ladies should also be directed, where two sleep in a bed, to change every night, or every week, their sides of the bed; which will prevent their tendency to sleep always on the same side; which is not only liable to produce crookedness, but also to occasion diseases by the internal parts being so long kept in uniform contact as to grow together. For the same reason they should not be allowed to sit always on the same side of the fire or window, because they will then be inclined too frequently to bend themselves to one side.

Another great cause of injury to the shape of young ladies is from the pressure of stays, or other tight bandages, which at the same time cause other diseases by changing the form or situation of the internal parts. If a hard part of the stays, even a knot of the thread, with which they are sewed together, is pressed hard upon one side more than the other, the child bends from the side most painful, and thus occasions a curvature of the spine. To counteract this effect, such stays as have fewest hard parts, and especially such as can be daily or weekly turned, are preferable to others.

Where frequent lying down on a sofa in the day-time, and swinging frequently for a short time by the hands or head, with loose dresses, do not relieve a beginning distortion of the back; recourse

course may be had to a chair with stuffed moveable arms for the purpose of suspending the weight of the body by cushions under the arm-pits, like resting on crutches, or like the leading-strings of infants. From the top of the back of the same chair a curved steel bar may also project to suspend the body occasionally, or in part by the head, like the swing above mentioned. The use of this chair is more efficacious in straightening the spine, than simply lying down horizontally; as it not only takes off the pressure of the head and shoulders from the spine, but at the same time the inferior parts of the body contribute to draw the spine straight by their weight; or lastly, recourse may be had to a spinal machine first described in the *Mémoires* of the academy of surgery in Paris, Vol. III. p. 600, by M. Le Vacher, and since made by Mr. Jones, at No. 6, North-street, Tottenham-court-road, London, which suspends the head, and places the weight of it on the hips. This machine is capable of improvement by joints in the bar at the back of it, to permit the body to bend forwards without diminishing the extension of the spine.

The objections of this machine of M. Vacher, which is made by Mr. Jones, are first, that it is worn in the day-time, and has a very unsightly appearance. Mr. Jones has endeavoured to remedy this, by taking away the curved bar over the head, and substituting in its place a forked bar, rising up behind



Barlow sculp.



hind each ear, with webs fastened to it, which pass under the chin and occiput. But this is not an improvement, but a deterioration of M. Vacher's machine, as it prevents the head from turning with facility to either side. Another objection is, that its being worn, when the muscles of the back are in action, it is rather calculated to prevent the curvature of the spine from becoming greater, than to extend the spine, and diminish its curvature.

For this latter purpose I have made a steel bow, as described in the annexed plate, which receives the head longitudinally from the forehead to the occiput; having a fork furnished with a web to sustain the chin, and another to sustain the occiput. The summit of the bow is fixed by a swivel to the board going behind the head of the bed above the pillow. The bed is to be inclined from the head to the feet about twelve or sixteen inches. Hence the patient would be constantly sliding down during sleep, unless supported by this bow, with webbed forks, covered also with fur, placed beneath the chin, and beneath the occiput. There are also proper webs lined with fur for the hands to take hold of occasionally, and also to go under the arms. By these means I should hope great advantage from gradually extending the spine during the inactivity of the muscles of the back; and that it may be done without disturbing the sleep of the patient, and if this should happen, the
bow

bow is made to open by a joint at the summit of it, so as to be instantly disengaged from the neck by the hand of the wearer. This bow I have now used with advantage on one patient, and it may be had from Mr. Harrison, whitesmith, Bridgegate, Derby.

It is also possible that a slight compress on the prominent part of a curved spine might be applied with advantage both in sleep and in waking hours, if it could be nicely held on the part by a weak and very flexible spring, with a proper counter-pressure on some distant part; but this would require more art than could be managed, except by those who have very accurate mechanical ideas, and must differ with every kind of curvature. Thus if the prominent part of the curve of the spine be on one side, a stuffed cushion fixed to the centre of a long thin steel spring should be applied on the prominence; one end of this long spring should be bent by a strap joined to a waistcoat on the opposite shoulder, and the other end of it by a strap joined to drawers on the opposite hip; the degree of pressure to be adjusted by the tightness of these straps. If the prominent part of a curved spine be exactly behind, the ends of the long spring should extend from the lowest bone of the neck to the os coccygis, and should have its two ends attached to the top of a waistcoat, and to the waistband of a pair of drawers.

It will be from hence easily perceived, that all
other

other methods of confining or directing the growth of young people should be used with great skill; such as back-boards, or bandages, or stocks for the feet; and that their application should not be continued too long at a time, lest worse consequences should ensue, than the deformity they were designed to remove. To this may be added, that the stiff erect attitude taught by some modern dancing masters does not contribute to the grace of person, but rather militates against it; as is well seen in one of the prints in Hogarth's *Analysis of Beauty*; and is exemplified by the easy grace of some of the ancient statues, as of the *Venus de Medicis*, and the *Antinous*, and in the works of some modern artists, as in a beautiful print of *Hebe feeding an Eagle*, painted by *Hamilton*, and engraved by *Eginton*, and many of the figures of *Angelica Kauffman*.

Where the bone of one of the vertebræ of the back has been swelled on both sides of it, so as to become protuberant, issues near the swelled part have been found of great service, as mentioned in *Species 18* of this Genus. This has induced me to propose in curvatures of the spine, to put an issue on the outside of the curve, where it could be certainly ascertained, as the bones on the convex side of the curve must be enlarged; in one case I thought this of service, and recommend the further trial of it.

In the tendency to curvature of the spine, whatever

ever strengthens the general constitution is of service; as the use of the cold bath in the summer months. This however requires some restriction both in respect to the degree of coldness of the bath, the time of continuing in it, and the season of the year. Common springs, which are of forty-eight degrees of heat, are too cold for tender constitutions, whether of children or adults, and frequently do them great and irreparable injury. The coldness of river-water in the summer months, which is about sixty-eight degrees, or that of Matlock, which is about sixty-eight, or of Buxton, which is eighty-two, are much to be preferred. The time of continuing in the bath should be but a minute or two, or not so long as to occasion a trembling of the limbs from cold. In respect to the season of the year, delicate children should certainly only bathe in the summer months; as the going frequently into the cold air in winter will answer all the purposes of the cold bath.

17. *Claudicatio coxaria*. Lameness of the hip. A nodding of the thigh-bone is said to be produced in feeble children by the softness of the neck or upper part of that bone beneath the cartilage; which is naturally bent, and in this disease bends more downwards, or nods, by the pressure of the body; and thus renders one leg apparently shorter than the other. In other cases the end of the bone is protruded out of its socket, by inflammation

tion or enlargement of the cartilages or ligaments of the joint, so that it rests on some part of the edge of the acetabulum, which in time becomes filled up. When the legs are straight, as in standing erect, there is no verticillary motion in the knee-joint; all the motion then in turning out the toes further than nature designed, must be obtained by straining in some degree this head of the thigh-bone, or the acetabulum, or cavity, in which it moves. This has induced me to believe, that this misfortune of the nodding of the head of the bone, or partial dislocation of it, by which one leg becomes shorter than the other, is sometimes occasioned by making very young children stand in what are called stocks; that is with their heels together, and their toes quite out. Whence the socket of the thigh-bone becomes inflamed and painful, or the neck of the bone is bent downward and outwards.

In this case there is no expectation of recovering the straightness of the end of the bone; but these patients are liable to another misfortune, that is, to acquire afterwards a distortion of the spine; for as one leg is shorter than the other, they sink on that side, and in consequence bend the upper part of their bodies, as their shoulders, the contrary way, to balance themselves; and then again the neck is bent back again towards the lame side, to preserve the head perpendicular; and thus the figure becomes quite distorted like the letter S,

owing originally to the deficiency of the length of one limb. The only way to prevent this curvature of the spine is for the child to wear a high heeled shoe or patten on the lame foot, so as to support that side on the same level with the other, and thus to prevent a greater deformity.

I have this day seen a young lady about twelve, who does not limp or waddle in walking; but nevertheless, when she stands or sits, she sinks down towards her right side, and turns out that toe more than the other. Hence, both as she sits and stands, she bends her body to the right; whence her head would hang a little over her right shoulder; but to replace this perpendicularly, she lifts up her left shoulder and contracts the muscles on that side of the neck; which are therefore become thicker and stronger by their continued action; but there is not yet any very perceptible distortion of the spine.

As her right toe is turned outward rather more than natural, this shews the disease to be in the hip-joint; because, when the limb is stretched out, the toe cannot turn horizontally in the least without moving the end of the thigh-bone; although when the knee is bent, the toe can be turned through one third or half of a circle by the rotation of the tibia and fibula of the leg round each other. Hence if children are set in stocks with their heels touching each other as they sit, and are then made to rise up, till they stand erect, the socket or head of the thigh-bone becomes injured, especially

especially in those children, whose bones are soft; and a shortness of that limb succeeds either by the bending of the neck of the thigh-bone, or by its getting out of the acetabulum; and a consequent rising of one shoulder, and a curvature of the spine are produced from so distant a cause.

M. M. An elastic cushion made of curled hair should be placed under the affected hip, whenever she sits; or should be fitted to the part by means of drawers, so that she cannot avoid sitting on it. A neck-swing, and lying down in the day, should be occasionally used to prevent or remove any curvature of the spine. The rest as in Species 13 and 15 of this genus.

18. *Spina protuberans*. Protuberant spine. One of the bones of the spine swells, and rises above the rest. This is not an uncommon disease, and belongs to the innutrition of the bones, as the bone must become soft before it swells; which softness is owing to defect of the secretion of phosphorated calcareous earth. The swelling of the bone compresses a part of the brain, called the spinal marrow, within the cavity of the back-bones; and in consequence the lower limbs become paralytic, attended sometimes with difficulty of emptying the bladder and rectum.

M. M. Issues put on each side of the prominent bone are of great effect, I suppose, by their stimulus; which excites into action more of the sen-

forial powers of irritation and sensation, and thus gives greater activity to the vascular system in their vicinity. The methods recommended in distortion of the spine are also to be attended to.

19. *Spina bifida*. Divided spine, called also Hydrorachitis, as well as the Hydrocephalus externus, is probably owing in part to a defect of ossification of the spine and cranium; and the collection of fluid beneath them may originate from the general debility of the system; which affects both the secreting, and absorbent vessels.

A curious circumstance, which is affirmed to attend the spina bifida, is, that on compressing the tumor with the hand gently, the whole brain becomes affected, and the patient falls asleep. I suppose the same must happen on compressing the hydrocephalus externus? See Sect. XVIII. 20.

20. *Offis palati defectus*. A defect of the bone of the palate, which frequently accompanies a division of the upper lip, occurs before nativity; and is owing to the deficient action of the secreting system, from whence the extremities are not completed. From a similar cause I have seen the point of the tongue deficient, and one joint of the two least fingers, and of the two least toes, in the same infant; who was otherwise a fine girl. See Sect. XXXIX. 4. 4.

The operation for the hare-lip is described by
many

many furgical writers; but there is a person in London, who makes very ingenious artificial palates; which prevent that defect of speech, which attends this malformation. This factitious palate consists of a thin plate of silver of the shape and form of the roof of the mouth; from the front edge to the back edge of this silver plate four or five holes are made in a straight line large enough for a needle to pass through them; on the back of it is then sewed a piece of sponge; which when expanded with moisture is nearly as large as the silver plate. This sponge is slipped through the division of the bone of the palate, so as to lie above it, while the silver plate covers the aperture beneath, and is suspended by the expanding sponge. This is removed every night and washed, and returned into its place in the morning; on this account it is convenient to have five or six of them, for the sake of cleanliness. I have been more particular in describing this invention, as I do not know the name, or place of residence, of the maker.

ORDO II.

Decreased Irritation.

GENUS III.

With decreased Action of the Absorbent System.

SOME decrease of heat attends these diseases, though in a less degree than those of the last genus, because the absorbent system of glands do not generate so much heat in their healthy state of action as the secreting system of glands, as explained in Class I. 1. 3.

SPECIES.

1. *Mucus faucium frigidus.* Cold mucus from the throat. Much mucus, of rather a saline taste, and less inspissated than usual, is evacuated from the fauces by hawking, owing to the deficient absorption of the thinner parts of it. This becomes a habit in some elderly people, who are continually spitting it out of their mouths; and has probably been brought on by taking snuff, or smoking tobacco; which by frequently stimulating the fauces have at length rendered the absorbent vessels less excitable by the natural stimulus of the saline part of the secretion, which ought to be reabsorbed, as soon as secreted.

M. M. A few grains of powder of bark frequently

quently put into the mouth, and gradually diffused over the fauces. A gargle of barley water.

2. *Sudor frigidus*. The cold dampness of the hands of some people is caused by the deficient absorption of perspirable matter; the clammy or viscid feel of it is owing to the mucous part being left upon the skin. The coldness is produced both by the decreased action of the absorbent system, and by the evaporation of a greater quantity of the perspirable matter into the air, which ought to have been absorbed.

M. M. Wash the hands in lime water, or with a small quantity of volatile alkali in water.

3. *Catarrhus frigidus*. The thin discharge from the nostrils in cold weather. The absorbent vessels become torpid by the diminution of external heat, sooner than the secreting ones, which are longer kept warm by the circulating blood, from which they select the fluid they secrete; whereas the absorbent vessels of the nostrils drink up their fluids, namely the thin and saline part of the mucus, after it has been cooled by the atmosphere. Hence the absorbents ceasing to act, and the secreting vessels continuing some time longer to pour out the mucus, a copious thin discharge is produced, which trickles down the nostrils in cold weather. This discharge is so acrid as to inflame the upper lip; which is owing to the neutral salts, with

which it abounds, not being reabsorbed; so the tears in the fistula lacrymalis inflame the cheek. See Class I. 1. 2. 7.

4. *Expectoratio frigida.* Cold expectoration. Where the pulmonary absorption is deficient, an habitual cough is produced, and a frequent expectoration of thin saline mucus; as is often seen in old enfeebled people. Though the stimulus of the saline fluid, which attends all secretions, is not sufficient to excite the languid absorbent vessels to imbibe it; yet this saline part, together with the increased quantity of the whole of the secreted mucus, stimulates the branches of the bronchia, so as to induce an almost incessant cough to discharge it from the lungs. A single grain of opium, or any other stimulant drug, as a wine-posset with spirit of hartshorn, will cure this cold cough, and the cold catarrh of the preceding article, like a charm, by stimulating the torpid mouths of the absorbents into action. Which has given rise to an indiscriminate and frequently pernicious use of the warm regimen in coughs and catarrhs of the warm or inflammatory kind, to the great injury of many.

M. M. Half a grain of opium night and morning promotes the absorption of the more fluid and saline parts, and in consequence thickens the mucus, and abates its acrimony. Warm diluent drink, rhine-whey, with volatile alkali,

5. *Urina uberius pallida.* On being exposed naked to cold air, or sprinkled with cold water, a quantity of pale urine is soon discharged; for the absorbents of the bladder become torpid by their sympathy with those of the skin; which are rendered quiescent by the diminution of external heat; but the kidneys continue to secrete the urine, and as no part of it is absorbed, it becomes copious and pale. This happens from a similar cause in cold fits of agues; and in less degree to many debilitated constitutions, whose extremities are generally cold and pale. The great quantity of limpid water in hysterical cases, and in diabetes, belongs to Class I. 3. 1. 10. I. 3. 2. 6.

M. M. Tincture of cantharides, opium, alum, forbentia. Flannel shirt in cold weather. Animal food. Beer. Wine. Friction. Exercise. Fire.

6. *Diarrhœa frigida.* Liquid stools are produced by exposing the body naked to cold air, or sprinkling it with cold water, for the same reason as the last article.

But this disease is sometimes of a dangerous nature; the intestinal absorption being so impaired, that the aliment is said to come away undiminished in quantity, and almost unchanged by the powers of digestion, and is then called lenteria.

The mucus of the rectum sometimes comes away like pellucid hartshorn jelly, and liquefies by heat like that, towards the end of inirritative fevers, which

which is owing to the thinner part of the mucus not being absorbed, and thus resembles the catarrh of some old people.

M. M. Opium, campechy wood, armenian bole. Blister. Flannel shirt in cold weather. Clysters with opium. Friction on the bowels morning and night. Equitation twice a day.

7. *Fluor albus frigidus*. Cold fluor albus. In weak constitutions, where this discharge is pellucid and thin, it must proceed from want of absorption of the mucous membrane of the vagina, or uterus, and not from an increased secretion. This I suspect to be the most frequent kind of fluor albus; the former one described at Class I. 1. 2. 11. attends menstruation, or is a discharge instead of it, and thus resembles the venereal orgasm of female quadrupeds. The discharge in the cold kind being more saline, is liable to excoriate the part, and thus produce smarting in making water; in its great degree it is difficult to cure.

M. M. Increase the evacuation by stool and by perspiration, by taking rhubarb every night, about six or ten grains with one grain of opium for some months. Flannel shirt in winter. Balsam copaiva. Gum kino, bitters, chalybeates, friction over the whole skin with flannel morning and night. Partial cold bath, by sprinkling the loins and thighs, or sponging them with cold water. Mucilage, as isinglass boiled in milk; blanc mange,

mange, hartshorn jelly, are recommended by some. Tincture of cantharides sometimes seems of service given from ten to twenty drops or more, three or four times a day. A large plaster of burgundy pitch and armenian bole, so as to cover the loins and lower part of the belly, is said to have sometimes succeeded by increasing absorption by its compression in the manner of a bandage. A solution of metallic salts, as white vitriol, sixty grains to a pint; or an infusion of oak-bark may be injected into the vagina. Cold bath.

8. *Gonorrhœa frigida*. Cold gleet. Where the gleet is thin and pellucid, it must arise from the want of absorption of the membranes of the urethra, rather than from an increased secretion from them. This I suppose to be a more common disease than that mentioned at Class I. 1. 2. 10.

M. M. Metallic injections, partial cold bath, internal method as in the fluor albus above described. Balsam of copaiva. Tincture of cantharides. Introduce a few inches into the urethra a bougie smeared with balsam of copaiva. See Home on urethra, p. 105.

9. *Hepatis tumor*. The liver becomes enlarged from defect of the absorption of mucus from its cells, as in anasarca, especially in feeble children; at the same time less bile is secreted from the torpid circulation in the vena portæ. And as the ab-

sorbents,

forbents, which resume the thinner parts of the bile from the gall-bladder and hepatic ducts, are also torpid or quiescent, the bile is more dilute, as well as in less quantity. From the obstruction of the passage of the blood through the compressed vena porta these patients have tumid bellies, and pale bloated countenances; their paleness is probably owing to the deficiency of the quantity of red globules in the blood in consequence of the inert state of the bile.

These symptoms in children are generally attended with worms, the dilute bile and the weak digestion not destroying them. In sheep I have seen fluke-worms in the gall-ducts themselves among the dilute bile; which gall-ducts they eat through, and then produce ulcers, and the hectic fever, called the rot. See Class I. 1. 4. 10. and Article IV. 2. 6.

M. M. After a calomel purge, crude iron filings are specific in this disease in children, and the worms are destroyed by the returning acrimony and quantity of the bile. A blister on the region of the liver. Sorbentia, as worm-feed, fantonicum. Columbo. Bark.

The nitrous acid has been strongly recommended by Mr. Scot in tumours of the liver, which frequently occur in the east, where this gentleman resides; he gives two drachms of strong nitrous acid mixed with two pounds of water, to be drunk daily at intervals. See Syphilis, Class II. 1. 5. 2.

10. *Chlorosis*. When the defect of the due action of both the absorbent and fecerning vessels of the liver affects women, and is attended with obstruction of the catamenia, it is called chlorosis; and is cured by the exhibition of steel, which restores by its specific stimulus the absorbent power of the liver; and the menstruation, which was obstructed in consequence of debility, recurs.

Indigestion, owing to torpor of the stomach, and a consequent too great acidity of its contents, attend this disease; whence a desire of eating chalk, or marl. Sometimes a great quantity of pale urine is discharged in a morning, which is owing to the inaction of the absorbents, which are distributed on the neck of the bladder, during sleep. The swelling of the ankles, which frequently attends chlorosis, is another effect of deficient action of the absorbent system; and the pale countenance is occasioned by the deficient quantity of red globules of blood, caused by the deficient quantity or acrimony of the bile, and consequent weakness of the circulation. The pulse is so quick in some cases of chlorosis, that, when attended with an accidental cough, it may be mistaken for pulmonary consumption. This quick pulse is owing to the debility of the heart from the want of stimulus occasioned by the deficiency of the quantity, and acrimony of the blood.

M. M. Steel. Bitters. Constant moderate exercise. Friction with flannel all over the body and limbs

limbs night and morning. Rhubarb five grains, opium half a grain, every night. Flesh diet, with small beer, or wine and water. The disease continues some months, but at length subsides by the treatment above described. A bath of about eighty degrees, as Buxton Bath, is of service; a colder bath may do great injury.

11. *Hydrocele*. Dropsy of the vagina testis. Dropsies have been divided into the encysted and the diffused, meaning those of the cellular membrane, the cells of which communicate with each other like a sponge, and those of any other cavity of the body. The collections of mucous fluids in the various cells and cavities of the body arise from the torpor of the absorbent vessels of those parts. It is probable, that in dropsies attended with great thirst the cutaneous absorbents become paralytic first; and then from the great thirst, which is thus occasioned by the want of atmospheric moisture, the absorption of the fat ensues; as in fevers attended with great thirst, the fat is quickly taken up. See *Obesitas* I. 2. 3. 16. Some have believed, that the cellular and adipose membranes are different ones; as no fat is ever deposited in the eyelids or scrotum, both which places are very liable to be distended with the mucilaginous fluid of the anasarca, and with air in *Emphysema*. Sometimes a gradual absorption of the accumulated fluid takes place, and the thinner parts being taken up, there
3 remains

remains a more viscid fluid, or almost a solid in the part, as in some swelled legs, which cannot easily be indented by the pressure of the finger, and are called scorbutic. Sometimes the paralysis of the absorbents is completely removed, and the whole is again taken up into the circulation.

The Hydrocele is known by a tumor of the scrotum, which is without pain, gradually produced, with fluctuation, and a degree of pellucidity, when a candle is held behind it; it is the most simple incysted dropsy, as it is not in general complicated with other diseases, as ascites with scirrhus liver, and hydrocephalus internus, with general debility. The cure of this disease is effected by different ways; it consists in discharging the water by an external aperture; and by so far inflaming the cyst and testicle, that they afterwards grow together, and thus prevent in future any secretion or effusion of mucus; the disease is thus cured, not by the revivescence of the absorbent power of the lymphatics, but by the prevention of secretion by the adhesion of the vagina to the testis. This I believe is performed with less pain, and is more certainly manageable by tapping, or discharging the fluid by means of a trocar, and after the evacuation of it to fill the cyst with a mixture of wine and water for a few minutes till the necessary degree of stimulus is produced, and then to withdraw it; as recommended by Mr. Earle. See also

also Medical Commentaries by Dr. Duncan for 1793.

12. *Hydrocephalus internus*, or dropſy of the ventricles of the brain, is fatal to many children, and ſome adults. When this diſeaſe is leſs in quantity, it probably produces a fever, termed a nervous fever, and which is ſometimes called a worm fever, according to the opinion of Dr. Gilchriſt, in the Scots Medical Eſſays. This fever is attended with great inirritability, as appears from the dilated pupils of the eyes, in which it correſponds with the dropſy of the brain. And the latter diſeaſe has its paroxyſms of quick impulse, and in that reſpect correſponds with other fevers with inirritability.

The hydrocephalus internus is diſtinguiſhed from apoplexy by its being attended with fever, and from nervous fever by the paroxyſms being very irregular, with perfect intermiſſions many times in a day. In nervous fever the pain of the head generally affects the middle of the forehead; in hydrocephalus internus it is generally on one ſide of the head. One of the earlieſt criterions is the patient being uneaſy on raiſing his head from the pillow, and wiſhing to lie down again immediately; which I ſuppoſe is owing to the preſſure of the water on the larger trunks of the blood-veſſels entering the cavity being more intolerable than on the ſmaller ones; for if the larger trunks are compressed, it
1 must

must inconvenience the branches also; but if some of the small branches are compressed only, the trunks are not so immediately incommoded.

Blisters on the head, and mercurial ointment externally, with calomel internally, are principally recommended in this fatal disease. When the patient cannot bear to be raised up in bed without great uneasiness, it is a bad symptom. So I believe is deafness, which is commonly mistaken for stupor. See Class I. 2. 5. 6. And when the dilatation of the pupil of either eye, or the squinting is very apparent, or the pupils of both eyes much dilated, it is generally fatal. As by stimulating one branch of lymphatics into inverted motion, another branch is liable to absorb its fluid more hastily; suppose strong errhines, as common tobacco snuff to children, or one grain of turpeth mineral, (*hydrargyrus vitriolatus*), mixed with ten or fifteen grains of sugar, were gradually blown up the nostrils? See Class I. 3. 2. 1. I have tried common snuff upon two children in this disease; one could not be made to sneeze, and the other was too near death to receive advantage. When the mercurial preparations have produced salivation, I believe they may have been of service, but I doubt their good effect otherwise. In one child I tried the tincture of digitalis; but it was given with too timid a hand, and too late in the disease, to determine its effects. See Sect. XXIX. 5. 9.

As all the above remedies generally fail of success,

cess, I think frequent, almost hourly, shocks of electricity from very small charges might be passed through the head in all directions with probability of good event; as by Volta's rods of zinc and silver described in Class I. 2. 5. 5. A solution of hydrargyrus muriatus, corrosive sublimate of mercury in rectified spirit of wine, three grains to an ounce, is said to produce instantaneous and violent salivation; as described in Class II. 1. 5. 1. on Gonorrhœa. Could a small quantity of this violent stimulus be used according to the age of the child with probable good effect? Could the trephine be used with safety or advantage where the affected side can be distinguished? See Strabismus, Class I. 2. 5. 4. When one eye is affected, does the disease exist in the ventricle of that side?

“ Master L——, aged 9 years, became suddenly ill in the night about a week before I saw him. On the day before the attack, he had taken opening medicines, and had bathed afterwards. He had complained of violently acute pain in his head, shrieked frequently, ground his teeth hard, could not bear to have his head raised from the pillow, and was torpid or deaf. His tongue was white, pulse 110 in the evening and full. As yet the pupil of the eye was irritable, and he had no strabismus. He had been bled with leeches about the head, and blistered. I directed mercurial inunction, and calomel from 3 to 6 grains to be taken at first every six, and afterwards every three

I

hours.

hours. This plan produced no sensible effect, and the patient died on the 18th day after the seizure. He had convulsion-fits two days preceding his death, and the well-known symptoms of hydrocephalus internus all made their appearance. From what I had seen and read of this disease, I believed it to belong to inflammations, and at an earlier period I should be tempted to bleed as largely as for pneumonia. The fluid found after death in the ventricles of the brain I impute to debility of the absorbents induced by inflammation. My reasons are briefly these: 1. The acuteness of the pain. 2. The state of the pulse. In the above case for the first 9 or 10 days it did not exceed 110, and was full and strong. 3. To find out whether any febrile alternations took place, Master L.'s feet were frequently felt, and they were found at times cold, and at other times of a dry heat. I have many times seen this disease, but the patients were too young, or too far advanced, to inform me, whether they had chillness succeeded by heat at its onset. 4. The disorders to which the young are more peculiarly liable afford a presumption, that hydrocephalus internus is an inflammatory disease; and this is confirmed by the regularity of the period, within which it finishes its course. And lastly, does it not happen more frequently than is suspected from external injury?

“ I have just now been well informed, that Dr. Rush has lately cured five out of six patients by

copious bleedings. I relate here the reasons for an opinion without pretending to a discovery. Something like this doctrine may be found in certain modern publications, but it is delivered in that vague and diffuse style, which I trust your example will banish from medical literature."

To this idea of Dr. Beddoes may be added, that the hydrocele generally succeeds an injury, and consequent inflammation of the bag, which contains it. And that other dropsies, which principally attend inebriates, are consequent to too great action of the mucous membranes by the stimulus of beer, wine, and spirits. And lastly, that as these cases of hydrocephalus end so fatally, a new mode of treating them is much to be desired, and deserves to be seriously attended to.

13. *Ascites*. The dropsy of the cavity of the abdomen is known by a tense swelling of the belly; which does not sound on being struck like the tympany; and in which a fluctation can be readily perceived by applying one hand expanded on one side, and striking the tumour on the other.

Effusions of water into large cavities, as into that of the abdomen or thorax, or into the ventricles of the brain or pericardium, are more difficult to be re-absorbed, than the effusion of fluids into the cellular membrane; because one part of this extensive sponge-like system of cells, which connects all the solid parts of the body, may have
its

its power of absorption impaired, at the same time that some other part of it may still retain that power, or perhaps possess it in an increased degree; and as all these cells communicate with each other, the fluid, which abounds in one part of it, can be transferred to another, and thus be re-absorbed into the circulation.

In the ascites, cream of tartar has sometimes been attended with success; a dram or two drams are given every hour in a morning till it operates, and this is to be repeated for several days; but the operation of tapping is generally applied to at last. Dr. Sims, in the Memoirs of the Medical Society of London, Vol. III. has lately proposed, what he believes to be a more successful method of performing this operation, by making a puncture with a lancet in the scar of the navel, and leaving it to discharge itself gradually for several days, without introducing a canula, which he thinks injurious, both on account of the too sudden emission of the fluid, and the danger of wounding or stimulating the viscera. This operation I have twice known performed with less inconvenience, and I believe with more benefit to the patient, than the common method.

After the patient has been tapped, some have tried injections into the cavity of the abdomen, but hitherto I believe with ill event. Nor are experiments of this kind very promising of success. First, because the patients are generally

much debilitated, most frequently by spirituous potation, and have generally a disease of the liver, or of other viscera. And secondly, because the quantity of inflammation, necessary to prevent future secretion of mucus into the cavity of the abdomen, by uniting the peritoneum with the intestines or mesentery, as happens in the cure of the hydrocele, would I suppose generally destroy the patient, either immediately, or by the consequence of such adhesions.

This however is not the case in respect to the dropfy of the ovarium, or in the hydrocele.

14. *Hydrops thoracis*. The dropfy of the chest commences with loss of flesh, cold extremities, pale countenance, high coloured urine in small quantity, and general debility, like many other dropfies. The patient next complains of numbness in the arms, especially when elevated, with pain and difficulty of swallowing, and an absolute impossibility of lying down for a few minutes, or with sudden starting from sleep, with great difficulty of breathing and palpitation of his heart. It is often confounded with anasarca pulmonum, which see.

The numbness of the arms is probably owing more frequently to the increased action of the pectoral muscles in respiration, whence they are less at liberty to perform other offices, than to the connexion of nerves mentioned in Sect. XXIX. 5. 2.

The

The difficulty of swallowing is owing to the compression of the œsophagus by the lymph in the chest; and the impossibility of breathing in a horizontal posture originates from this, that if any parts of the lungs must be rendered useless, the inability of the extremities of them must be less inconvenient to respiration; since if the upper parts or larger trunks of the air-vessels should be rendered useless by the compression of the accumulated lymph, the air could not gain admittance to the other parts, and the animal must immediately perish.

If the pericardium is the principal seat of the disease, the pulse is quick and irregular. If only the cavity of the thorax is hydropic, the pulse is not quick nor irregular.

If one side is more affected than the other, the patient leans most that way, and has more numbness in that arm.

The hydrops thoracis is distinguished from the anasarca pulmonum, as the patient in the former cannot lie down half a minute; in the latter the difficulty of breathing, which occasions him to rise up, comes on more gradually; as the transition of the lymph in the cellular membrane from one part to another of it is slower, than that of the effused lymph in the cavity of the chest.

The hydrops thoracis is often complicated with fits of convulsive breathing; and then it produces a disease for the time very similar to the common

periodic asthma, which is perhaps owing to a temporary anasarca of the lungs; or to an impaired venous absorption in them. These exacerbations of difficult breathing are attended with cold extremities, cold breath, cold tongue, upright posture with the mouth open, and a desire of cold air, and a quick, weak, intermittent pulse, and contracted hands.

These exacerbations recur sometimes every two or three hours, and are relieved by opium, a grain every hour for two or three doses, with ether about a dram in cold water; and seem to be a convulsion of the muscles of respiration induced by the pain of the dyspnoea. As in Class III. 1. 1. 9.

M. M. A grain of dried squill, and a quarter of a grain of blue vitriol every hour for six or eight hours, unless it vomit or purge. A grain of opium. Blisters. Calomel three grains every third day, with infusion of senna. Bark. Chalybeates. Puncture in the side.

Can the fluctuation in the chest be heard by applying the ear to the side, as Hippocrates asserts? Can it be felt by the hand or by the patient before the disease is too great to admit of cure by the paracentesis? Does this dropsy of the chest often come on after peripneumony? Is it ever cured by making the patient sick by tincture of digitalis? Could it be cured, if on one side only, by the operation of puncture between the ribs, and afterwards by inflaming the cavity by the admission of air for
a time,

a time, like the cure of the hydrocele; the pleura afterwards adhering wholly to that lobe of the lungs, so as to prevent any future effusion of mucus?

I suspect the anasarca of the lungs, as well as the hydrops thoracis, to be most frequently diseases of those membranes only, and not to depend on the general paralysis of the absorbent system; and that they are then not accompanied with swelled legs, till the patient becomes universally weak; and that they have for their cause a rheumatic or gouty peripneumony or pleurisy; that is, that the lungs or pleura have been inflamed from their sympathy with some other viscus, and have deposited much coagulable lymph on the surface of their inflamed membranes, which could not readily become absorbed, and has thus caused the dropsy of the cavity of the chest, like the coagulable lymph or chalky matter left after the gout and rheumatism in other parts; or that the cellular membrane of the lungs becomes filled with a fluid from the present inaction of their absorbent vessels, which had previously been excited too violently; and that the anasarca of the lungs is thus produced like the anasarca which, frequently in weak constitutions, exists after the gout in the feet and knees, and after rheumatic inflammations of the joints. See Peripneumonia, Class II. 1. 2. 4. whence it appears, why the hydrops thoracis and anasarca
pulmonum

pulmonum so generally occur in gouty constitutions.

15. *Hydrops ovarii*. Dropsy of the ovary is another encysted dropsy, which seldom admits of cure. It is distinguished from ascites by the tumour and pain, especially at the beginning, occupying one side, and the fluctuation being less distinctly perceptible. When it happens to young subjects it is less liable to be mistaken for ascites. It affects women of all ages, either married or virgins; and is produced by cold, fear, hunger, bad food, and other debilitating causes. I saw an elegant young lady, who was shortly to have been married to a sensible man, with great prospect of happiness; who, on being overturned in a chaise in the night, and obliged to walk two or three miles in wet, cold, and darkness, became much indisposed, and gradually afflicted with a swelling and pain on one side of the abdomen; which terminated in a dropsy of the ovary, and destroyed her in two or three years. Another young woman I recollect seeing, who was about seventeen, and being of the very inferior class of people, seemed to have been much weakened by the hardship of a cold floor, and little or no bed, with bad food; and who to these evils had to bear the unceasing obloquy of her neighbours, and the persecution of parish officers.

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The following is abstracted from a letter of my friend Mr. Power, surgeon, at Bosworth in Leicestershire, on examining the body of an elderly lady who died of this disease, March 29, 1793. "On opening the abdomen I found a large cyst attached to the left ovarium by an elastic neck as thick as the little finger, and so callous as not to admit of being separated by scissars without considerable difficulty. The substance of the cyst had an appearance much resembling the gravid uterus near the full period of gestation, and was as thick. It had no attachment to the peritoneum, or any of the viscera, except by the hard callous neck I have mentioned; so that the blood must with difficulty have been circulated through it for some time. Its texture was extremely tender, being easily perforated with the finger, was of a livid red colour, and evidently in a sphacelated state. It contained about two gallons of a fluid of the colour of port wine, without any greater tenacity. It has fallen to my lot to have opened two other patients, whose deaths were occasioned by encysted dropsy of the ovarium. In one of these the ovarium was much enlarged with eight or ten cysts on its surface, but there was no adhesion formed by any of the cysts to any other part; nor had the ovarium formed any adhesion with the peritoneum, though in a very diseased state. In the other the disease was more simple, being only one cyst, without any attachment but to the ovarium.

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“As the ovarium is a part not necessary to life, and dropfies of this kind are so generally fatal in the end, I think I shall be induced, notwithstanding the hazard attending wounds, which penetrate the cavity of the abdomen, to propose the extirpation of the diseased part in the first case, which occurs to me, in which I can with precision say, that the ovarium is the seat of the disease, and the patient in other respects tolerably healthy; as the cavity of the abdomen is often opened in other cases without bad consequences.”

An argument, which might further countenance the operation thus proposed by Mr. Power, might be taken from the disease frequently affecting young persons; from its being generally in these subjects local and primary; and not like the ascites, produced or accompanied with other diseased viscera; and lastly, as it is performed in adult quadrupeds, as old sows, with safety, though by awkward operators.

16. *Anasarca pulmonum*. The dropfy of the cellular membrane of the lungs is usually connected with that of the other parts of the system. As the cells of the whole cellular membrane communicate with each other, the mucilaginous fluid, which remains in any part of it for want of due absorption, sinks down to the most depending cells; hence the legs swell, though the cause of the disease, the deficiency of absorption, may be in other parts of the system.

system. The lungs however are an exception to this, since they are suspended in the cavity of the thorax, and have in consequence a depending part of their own.

The anasarca of the lungs is known by the difficulty of respiration accompanied with swelled legs, and with a very irregular pulse. This last circumstance has generally been ascribed to a dropfy at the same time existing in the pericardium, but is more probably owing to the difficult passage of the blood through the lungs; because I found on dissection, in one instance, that the most irregular pulse, which I ever attended to, was owing to very extensive adhesion of the lungs; insomuch that one lobe intirely adhered to the pleura; and secondly, because this kind of dropfy of the lungs is so certainly removed for a time along with the anasarca of the limbs by the use of digitalis.

This medicine, as well as emetic tartar, or squill, when given so as to produce sickness, or nausea, or perhaps even without producing either in any perceptible degree, by affecting the lymphatics of the stomach, so as either to invert their motion, or to weaken them, increases by reverse sympathy the action, and consequent absorbent power of these lymphatics, which open into the cellular membrane. But as these medicines seldom succeed in producing an absorption of those fluids, which stagnate in the larger cavities of the body, as in the abdomen, or chest, and do generally succeed
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in this difficulty of breathing with irregular pulse above described, I conclude that it is not owing to an effusion of lymph into the pericardium, but simply to an anasarca of the lungs.

M. M. Digitalis. See Art. V. 2. 1. 2. and IV. 2. 3. 7. Tobacco. Squill. Emetic tartar (antimonium tartarizatum). Then Sorbentia. Chalybeates. Opium half a grain twice a day. Raisin wine and water, or other wine and water, is preferred to the spirit and water, which these patients have generally been accustomed to.

I have seen two cases, which were esteemed to be hydrothorax, but which I believed to be anasarca pulmonum, though they were attended with irregular pulse; for I do not understand, why an irregularity of pulse should be occasioned by water in the pericardium any more than by water in the lungs, or by any other obstruction to the circulation. See Class IV. 2. 1. 18. Pulsus intermittens, and Palpitatio cordis.

In both these cases the patients could not sleep above one minute at a time; which I ascribed to the debility of the action of the heart compared with the resistance to the circulation, and that some voluntary exertion became necessary to carry on the circulation, which does not exist in sleep. See Class I. 2. 1. 3. Somnus interruptus.

These two cases of patients about sixty years of age are here mentioned from a curious circumstance, that both the patients became in some degree

gree insane after being relieved by the tincture of digitalis taken to the quantity of thirty drops three or four times a day for two or three days; and remained in a slight degree of insanity for some months, and then as this increase of voluntary exertion ceased, they again became afflicted with the anasarca pulmonum, and swelling of the legs, and this repeatedly for two or three years. I have before seen a common anasarca repeatedly cured by insanity for a year or two, and two fevers I have seen attended with great debility cured by the access of insanity, which was called delirium by the attendants; and I lately witnessed the present cure of what was believed to be consumption by the access of insanity. All which were probably effected by the increased energy of some parts of the system owing to the addition of volition to the sensorial powers of irritation or association.

The usual cause of anasarca is from a diseased liver, and hence it most frequently attends those, who have drunk much fermented or spirituous liquors; but I suspect that there is another cause of anasarca, which originates from the brain; and which is more certainly fatal than that, which originates from a diseased liver. These patients, where the anasarca originates from, or commences in, the brain, have not other symptoms of diseased liver; have less difficulty of breathing at the beginning; and hold themselves more upright in their chair, and in walking. In this kind of dropfy I suspect
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the digitalis has less or no effect; as it particularly increases the absorption from the lungs.

17. *Obesitas*. Corpulency may be called an anasarca or dropfy of fat, since it must be owing to an analogous cause; that is, to the deficient absorption of fat compared to the quantity secreted into the cells which contain it. See Class II. 1. 4.

The method of getting free from too much fat without any injury to the constitution, consists, first, in putting on a proper bandage on the belly, so that it can be tightened or relaxed with ease, as a tightish under waistcoat, with a double row of buttons. This is to compress the bowels and increase their absorption; and it thus removes one principal cause of corpulency, which is the looseness of the skin. Secondly, he should omit one entire meal, as supper; by this long abstinence from food the absorbent system will act on the mucus and fat with greater energy. Thirdly, he should drink as little as he can with ease to his sensations; since, if the absorbents of the stomach and bowels supply the blood with much, or perhaps too much, aqueous fluid, the absorbents of the cellular membrane will act with less energy. Fourthly, he should use much salt or salted meat, which will increase the perspiration and make him thirsty; and if he bears this thirst, the absorption of his fat will be greatly increased, as appears in fevers and dropfies with
thirst;

thirst; this I believe to be more efficacious than soap. Fifthly, he may use aerated alkaline water for his drink, which may be supposed to render the fat more fluid,—or he may take soap in large quantities, which will be decomposed in the stomach. Sixthly, short rest, and constant exercise.

Vinegar has been said to reduce corpulency, but as it contains much vinous spirit, it may injure the general health without previously inducing leanness. Perhaps crystals of tartar might succeed better used daily in water at meals.

The most efficacious method of reducing the quantity of the fat I suspect may be by the use of the tincture of digitalis in small quantity, as twenty or thirty drops twice a day, as directed in Article IV. 2. 3. 7. As the effect of this medicine, when given in greater quantity, as in forty drops twice or thrice a day in hydrothorax or general anasarca, evidently consists in weakening the natural actions of the stomach, perhaps by previously stimulating that viscus too violently; in consequence the heart and arteries act less powerfully from their sympathy with the stomach; and the capillary vessels, and absorbents, act more powerfully in consequence of the less expenditure of sensorial power by the inert action of the heart and arteries; and will consequently absorb the accumulated fat from the cellular membrane, as explained in Supplement I. 12. 10.

18. *Splenis tumor*. Swellings of the spleen, or in its vicinity, are frequently perceived by the hand in intermittents, which are called Ague-cakes, and seem owing to a deficiency of absorption in the affected part.

Mr. Y——, a young man about twenty-five years of age, who lived intemperately, was seized with an obstinate intermittent, which had become a continued fever with strong pulse, attended with daily remission. A large hard tumour on the left side, on the region of the spleen, but extending much more downward, was so distinctly perceptible, that one seemed to get one's fingers under the edge of it, much like the feel of the brawn or shield on a boar's shoulder. He was repeatedly bled, and purged with calomel, had an emetic, and a blister on the part, without diminishing the tumour; after some time he took the Peruvian bark, and slight doses of chalybeates, and thus became free from the fever, and went to Bath for several weeks, but the tumour remained. This tumour I examined every four or five years for above thirty years. His countenance was pale, and towards the end of his life he suffered much from ulcers on his legs, and died about sixty, of general debility; like many others, who live intemperately in respect to the ingurgitation of fermented or spirituous liquors.

As this tumour commenced in the cold fit of an intermittent fever, and was not attended with pain,
and

and continued so long without endangering his life, there is reason to believe it was simply occasioned by deficient absorption, and not by more energetic action of the vessels which constitute the spleen.

See Class II. 1. 2. 13.

M. M. Venesection. Emetic, cathartic with calomel; then forbentia, chalybeates, Peruvian bark.

19. *Genu tumor albus*. White swelling of the knee, is owing to deficient absorption of the lymphatics of the membranes including the joint, or capsular ligaments, and sometimes perhaps of the gland which secretes the synovia; and the ends of the bones are probably affected in consequence.

I saw an instance, where a caustic had been applied by an empyric on a large white swelling of the knee, and was told, that a fluid had been discharged from the joint, which became ankylosed, and healed without loss of the limb.

M. M. Repeated blisters on the part early in the disease are said to cure it by promoting absorption; saturnine solutions externally are recommended. Bark, animal charcoal, as burnt sponge, opium in small doses. Friction with the hand. Four or six leeches applied on or beneath the knee alternately with the blisters, and a cupping glass put over the wounds made by the leeches are much recommended.

20. *Bronchocele*. Swelled throat. An enlargement of the thyroid glands, said to be frequent in

mountainous countries, where river water is drunk, which has its source from dissolving snows. This idea is a very ancient one, but perhaps not on that account to be the more depended upon, as authors copy one another. *Tumidum guttur quis miratur in Alpibus*, seems to have been a proverb in the time of Juvenal. The inferior people of Derby are much subject to this disease, but whether more so than other populous towns, I can not determine; certain it is, that they chiefly drink the water of the Derwent, which arises in a mountainous country, and is very frequently blackened as it passes through the morasses near its source; and is generally of a darker colour, and attended with a whiter foam, than the Trent, into which it falls; the greater quantity and whiteness of its froth I suppose may be owing to the visciditv communicated to it by the colouring matter. The lower parts of the town of Derby might be easily supplied with spring water from St. Alkmund's well; or the whole of it from the abundant springs near Bowbridge: the water from which might be conveyed to the town in hollow bricks, or clay-pipes, at no very great expence, and might be received into frequent reservoirs with pumps to them; or laid into the houses.

M. M. Twenty grains of burnt sponge with ten of nitre made with mucilage into lozenges, and permitted to dissolve slowly under the tongue twice a day, is asserted to cure in a few months; perhaps
other

other animal charcoal, as candle-snuffs, might do the same.

I have directed in the early state of this disease a mixture of common salt and water to be held in the mouth, particularly under the tongue, for a few minutes, four or six times a day for many weeks, which has sometimes succeeded, the salt and water is then spit out again, or in part swallowed. Externally vinegar of squills has been applied, or a mercurial plaster, or fomentations of acetated ammoniac; or ether. Some empirics have applied caustics on the bronchocele, and sometimes, I have been told, with success; which should certainly be used where there is danger of suffocation from the bulk of it. One case I saw, and one I was well informed of, where the bronchocele was cured by burnt sponge, and a hectic fever supervened with colliquative sweats; but I do not know the final event of either of them.

De Haen affirms the cure of bronchocele to be effected by flowers of zinc, calcined egg-shells, and scarlet-cloth burnt together in a close crucible, which was tried with success, as he assured me, by a late lamented physician, my friend, Dr. Small of Birmingham; who to the cultivation of modern sciences added the integrity of ancient manners; who in clearness of head, and benevolence of heart, had few equals, perhaps no superiors.

21. *Scrofula*. King's evil is known by tu-
 N 3 mours

mours of the lymphatic glands, particularly of the neck. The upper lip, and division of the nostrils are swelled, with a florid countenance, a smooth skin, and a tumid abdomen. Cullen. The absorbed fluids in their course to the veins in the scrofula are arrested in the lymphatic or conglobate glands; which swell, and after a great length of time, inflame and suppurate. Materials of a peculiar kind, as the variolous and venereal matter, when absorbed in a wound, produce this torpor, and consequent inflammation of those lymphatic glands, where they first arrive, as in the axilla and groin. There is reason to suspect, that the tonsils frequently become inflamed, and suppurate from the matter absorbed from carious teeth; and I saw a young lady, who had both the axillary glands swelled, and which suppurated; which was believed to have been caused by her wearing a pair of new green gloves for one day, when she had perspired much, and was much exhausted and fatigued by walking; the gloves were probably dyed in a solution of verditer.

These indolent tumours of the lymphatic glands, which constitute the scrofula, originate from the inirritability of those glands; which therefore sooner fall into torpor after having been stimulated too violently by some poisonous material; as the muscles of enfeebled people sooner become fatigued, and cease to act, when exerted, than those of stronger ones. On the same account these scrofulous glands
are

are much longer in acquiring increase of motion, after having been stimulated into inactivity, and either remain years in a state of indolence, or suppurate with difficulty, and sometimes only partially.

The difference between scrofulous tumours, and those before described, consists in this; that in those either glands of different kinds were diseased, or the mouths only of the lymphatic glands were become torpid; whereas in scrofula the conglobate glands themselves become tumid, and generally suppurate after a great length of time, when they acquire new sensibility. See Sect. XXXIX.

4. 5.

These indolent tumours may be brought to suppurate sometimes by passing electric shocks through them every day for two or three weeks, as I have witnessed. It is probable, that the alternate application of snow or iced water to them, till they become painfully cold, and then of warm flannel or warm water, frequently repeated, might restore their irritability by accumulation of sensorial power; and thence either facilitate their dispersion, or occasion them to suppurate. See Class II. 1. 4.

13.

This disease is very frequent amongst the children of the poor in large towns, who are in general ill fed, ill lodged, and ill clothed; and who are further weakened by eating much salt with their scanty meal of insipid vegetable food, which is sel-

dom of better quality than water gruel, with a little coarse bread in it. See diarrhœa of infants, Class I. 1. 2. 5. Scrofulous ulcers are difficult to heal, which is owing to the deficiency of absorption on their pale and flabby surfaces, and to the general inirritability of the system. See Class I. 1. 3. 13.

M. M. Plentiful diet of flesh-meat and vegetables with small beer. Opium, from a quarter of a grain to half a grain twice a day. Sorbentia. Tincture of digitalis, thirty drops twice a day. Externally sea-bathing, or bathing in salt and water, one pound to three gallons, made warm. The application of Peruvian bark in fine powder, seven parts, and white lead (cerussa), in fine powder one part, mixed together and applied on the ulcers in dry powder, by means of lint and a bandage, to be renewed every day. Or very fine powder of calamy alone, lapis calaminaris. If powder of manganese? See Class II. 1. 4. 13.

22. *Scirrhus*. After the absorbent veins of a gland cease to perform their office, if the secreting arteries of it continue to act some time longer, the fluids are pushed forwards, and stagnate in the receptacles or capillary vessels of the gland; and the thinner part of them only being resumed by the absorbent system of the gland, a hard tumour gradually succeeds; which continues like a lifeless mass, till from some accidental violence it gains sensibility,

sensibility, and produces cancer, or suppurates. Of this kind are the scirrhus glands of the breasts, of the lungs, of the mesentery, and the scrofulous tumours about the neck and the bronchocele.

Another seat of scirrhus is in the membranous parts of the system, as of the rectum intestinum, the urethra, the gula or throat; and of this kind is the veruca or wart, and the clavus pedum, or corns on the toes. A wen sometimes arises on the back of the neck, and sometimes between the shoulders; and by distending the tendinous fascia produces great and perpetual pain.

M. M. Mercurial ointment. Cover the part with oiled silk. Extirpation. Electric shocks through the tumour. An issue into the substance of the wen. Opium. Ether externally.

23. *Scirrhus recti intestini.* Scirrhus of the rectum. A scirrhus frequently affects a canal, and by contracting its diameter becomes a painful and deplorable disease. The canals thus obstructed are the rectum, the urethra, the throat, the gall-ducts, and probably the excretory ducts of the lymphatics, and of other glands.

The scirrhus of the rectum is known by the patient having pain in the part, and being only able to part with liquid feces, and by the introduction of the finger; the swelled part of the intestine is sometimes protruded downwards, and
hangs

hangs like a valve, smooth and hard to the touch, with an aperture in the centre of it. See a paper on this subject by J. Sherwin. *Memoirs of a London Medical Society*, Vol. II. p. 9.

M. M. To take but little solid food. Aperient medicines. Introduce a candle smeared with mercurial ointment. Sponge-tent. Clysters with forty drops of laudanum. Introduce a leathern canula, or gut, and then either a wooden maundril, or blow it up with air, so as to distend the contracted part as much as the patient can bear. Or spread mercurial plaster on thick soft leather, and roll it up with the plaster outwards to any thickness and length, which can be easily introduced and worn; or two or three such pieces may be introduced after each other. The same may be used to compress bleeding internal piles. See Class I. 2. 1. 6. Rub mercurial ointment on the sphincter and every night for a fortnight.

May not this disease be cured by lunar caustic applied on the end of a pessary or bougie, in the same manner as used by J. Hunter, and since by Mr. E. Home, in strictures of the urethra; when, on introducing the finger, a kind of membranous valve can be distinguished rather than an extensive scirrhus or induration. See the next article.

24. *Scirrhus urethræ*. Scirrhus of the urethra. The passage becomes contracted by the thickened membrane,

membrane, and the urine is forced through with great difficulty, and is thence liable to distend the canal behind the stricture; till at length an aperture is made, and the urine forces its way into the cellular membrane, making large sinuses. This situation sometimes continues many months, or even years, and so much matter is evacuated after making water, or at the same time, by the action of the muscles in the vicinity of the sinuses, that it has been mistaken for an increased secretion from the bladder, and has been erroneously termed a catarrh of the bladder. See a paper by Dr. R. W. Darwin in the Medical Memoirs.

M. M. Distend the part gradually by catgut bougies, which by their compression will at the same time diminish the thickness of the membrane, or by bougies of elastic gum, or of horn boiled soft. The patient should gain the habit of making water slowly, which is a matter of the utmost consequence, as it prevents the distention, and consequent rupture, of that part of the urethra, which is between the stricture and the neck of the bladder.

When there occurs an external ulcer in the perinæum, and the urine is in part discharged that way, the disease cannot be mistaken. Otherwise, from the quantity of matter, it is generally supposed to come from the bladder, or prostate gland; and the urine, which escapes from the ruptured urethra, mines its way amongst the muscles

cles and membranes, and the patient dies tabid, owing to the want of an external orifice to discharge the matter. See Class II. 1. 4. 11.

Mr. Home has published a very ingenious and useful work, entitled, a Dissertation on Strictures of the Urethra, in which he has recorded many cases successfully treated by lunar caustic, inserted in the end of a bougie, and applied to the contracted part of the urethra, so as to destroy the stricture.

From the form of the cavity of the urethra, taken by injecting wax into it, there appears naturally to exist a kind of valve immediately behind the bulb of the urethra, which, when the penis is erect, shuts up the orifice, and prevents the regurgitation of the semen into the bladder during the action of the accelerator muscles in the act of its expulsion; and this natural constriction or valve appears generally to be the first seat of stricture.

Above the bulb, about two or three inches from the orifice of the glans, the cavity of the urethra appears also lessened; and in some cases the orifice of the very extremity appears less than other parts of the canal; these parts are therefore more contracted during the emissio seminis, and add to its velocity at its exit; and are thence more liable to scirrhus or stricture. And by some observations, Mr. Home has shewn, that a sympathy exists between the strictures of these parts; and that the
more

more forward strictures are frequently produced in consequence of that behind the bulb; and finds it necessary to destroy them all, by frequent application of the caustic.

By the use of which, (which was first proposed by Wiseman, first applied by John Hunter, and so greatly improved by Mr. Home) the lives of great numbers are rendered happy, who otherwise gradually perish by a most painful and hopeless malady.

25. *Scirrhus œsophagi*. A scirrhus of the throat contracts the passage so as to render the swallowing of solids impracticable, and of liquids difficult. It affects patients of all ages, but is probably most frequently produced by swallowing hard angular substances, when people have lost their teeth; by which this membrane is over-distended, or torn, or otherwise injured.

M. M. Put milk into a bladder tied to a canula or catheter; introduce it past the stricture, and press it into the stomach. Distend the stricture gradually by a sponge-tent fastened to the end of whalebone, or by a plug of wax, or a spermaceti candle, about two inches long; which might be introduced, and left there with a string only fixed to it to hang out of the mouth, to keep it in its place, and to retract it by occasionally; for which purpose the string must be put through a catheter or hollow probang, when it is to be retracted. Or
lastly,

lastly, introduce a gut fixed to a pipe; and then distend it by blowing wind into it. The swallowing a bullet with a string put through it, to retract it on the exhibition of an emetic, has also been proposed. Externally, mercurial ointment has been much recommended. Poultice. Oiled silk. Clysters of broth. Warm bath of broth. Transfusion of blood into a vein three or four ounces a day? See Class III. 1. 1. 15.

I directed a young woman, about twenty-two years of age, to be fed with new milk put into a bladder, which was tied to a catheter, and introduced beyond the stricture in her throat; after a few days, her spirits sunk, and she refused to use it further, and died. Above thirty years ago, I proposed to an old gentleman, whose throat was entirely impervious, to supply him with a few ounces of blood daily from an ass, or from the human animal, who is still more patient and tractable, in the following manner: To fix a silver pipe about an inch long to each extremity of a chicken's gut, the part between the two silver ends to be measured by filling it with warm water; to put one end into the vein of a person hired for that purpose, so as to receive the blood returning from the extremity; and when the gut was quite full, and the blood running through the other silver end, to introduce that end into the vein of the patient upwards towards the heart, so as to admit no air along with the blood. And lastly, to support the

gut and silver ends on a water-plate, filled with water of ninety-eight degrees of heat, and to measure how many ounces of blood was introduced by passing the finger, so as to compress the gut, from the receiving-pipe to the delivering-pipe; and thence to determine how many gut-fulls were given from the healthy person to the patient. Mr. ——— considered a day on this proposal, and then another day, and at length answered, that “ he now found himself near the house of death; and that, if he could return, he was now too old to have much enjoyment of life; and therefore he wished rather to proceed to the end of that journey, which he was now so near, and which he must at all events soon go, than return for so short a time.” He lived but a few days afterwards, and seemed quite careless and easy about the matter. See Suppl. I. 14. 4.

A difficulty of swallowing food, and a rejection soon after, of the whole or a part of it, may be often owing probably to a sort of valve made by a part of the membrane which lines the œsophagus; and may thus resemble strictures of the urethra; which last are so frequently cured by the nice application of lunar caustic, as described by Mr. Everard Home, in his Treatise on Strictures of the Urethra. Suppose a thick bougie, made of linen spread with adhesive plaster, and rolled up, was armed at the end with a bit of lunar caustic, with which the stricture of the œsophagus could be touched

touched repeatedly, till an unarmed bougie could be passed readily into the stomach? Could such a valve be burst, or inverted, by pouring a pound or two of crude mercury into the œsophagus?

26. *Lacteorum inirritabilitas.* Inirritability of the lacteals is described in Sect. XXVIII. under the name of paralysis of the lacteals; but as the word paralysis has generally been applied to the disobedience of the muscles to the power of volition, the name is here changed to inirritability of the lacteals, as more characteristic of the disease.

27. *Lymphaticorum inirritabilitas.* The inirritability of the cellular and cutaneous lymphatics is described in Sect. XXIX. 5. 1. and in Class I. 2. 3. 16. The inirritability of the cutaneous lymphatics generally accompanies anasarca, and is the cause of the great thirst in that malady. At the same time, the cellular lymphatics act with greater energy, owing to the greater derivation of sensorial power to them, in consequence of the less expenditure of it by the cutaneous ones; and hence they absorb the fat, and mucus, and also the thinner parts of the urine. Whence the great emaciation of the body, the muddy sediment, and the small quantity of water in this kind of dropsy.

ORDO II.

Decreased Irritation.

GENUS IV.

With decreased Actions of other Cavities and Membranes.

MANY of the diseases of this genus are attended with pain, and with cold extremities, both which cease on the exhibition of wine or opium; which shews, that they originate from deficient action of the affected organ. These pains are called nervous or spasmodic, are not attended with fever, but are frequently succeeded by convulsions and madness; both which belong to the class of volition. Some of them return at periods, and when these can be ascertained, a much less quantity of opium will prevent them, than is necessary to cure them, when they are begun; as the vessels are then torpid and inirritable from the want of sensorial power, till by their inaction it becomes again accumulated.

Our organs of sense, properly so called, are not liable to pain from the absence of their appropriated stimuli, as from darkness or silence; but the other senses, which may be more properly called appetites, as those by which we perceive heat, hunger, thirst, lust, want of fresh air, are affected with pain from the defect or absence of their accustomed stimuli, as well as with pleasure

by the possession of them ; it is probable that some of our glands, the sense or appetite of which requires or receives something from the circulating blood, as the pancreas, liver, testes, prostate gland, may be affected with aching or pain, when they cannot acquire their appropriated fluid.

Wherever this defect of stimulus occurs, a torpor or inaction of the organ ensues, as in the capillaries of the skin, when exposed to cold ; and in the glands, which secrete the gastric juice, when we are hungry. This torpor however, and concomitant pain, which are at first owing to defect of stimulus, are afterwards induced by other associations or catenations, and constitute the beginning of ague-fits.

It must be further observed, that in the diseases of pain without fever, the pain is frequently not felt in the part where the cause of the disease resides ; but is induced by sympathy with a distant part, the irritability or sensibility of which is greater or less than its own. Thus a stone at the neck of the bladder, if its stimulus is not very great, only induces the pain of strangury at the glans penis. If its stimulus be greater, it then induces pain at the neck of the bladder. The concretions of bile, which are protruded into the neck of the gall-bladder, when the disease is not very great, produce pain at the other extremity of the bile-duct, which enters the duodenum immediately under the pit of the stomach ; but, when the disease is great from the largeness of the bile-stone, the pain is
felt

felt in the region of the liver at the neck of the gall-bladder.

It appears from hence, that the pains enumerated in this genus are consequences of the inactivity of the organ ; and, as they do not occasion other diseases, should be classed according to their proximate cause, which is, defective irritation ; there are nevertheless other pains from defect of stimulus, which produce convulsions, and belong to Class III. 1. 1. ; and others, which produce pains of some distant part by association, and belong to Class IV. 2. 2.

SPECIES.

1. *Sitis*. Thirst. The senses of thirst and of hunger seem to have this connexion, that the former is situated at the upper end, and the latter at the lower end of the same canal. One about the pharynx, where the œsophagus opens into the mouth, and the other about the cardia ventriculi, where it opens into the stomach. The extremities of other canals have been shewn to possess correspondent sensibilities, or irritabilities, as the two ends of the urethra, and of the common gall-duct. See IV. 2. 2. 2. and 4.

The membrane of the upper end of the gullet becomes torpid, and consequently painful, when there is a deficiency of aqueous fluid in the general system ; it then wants its proper stimulus. In the same manner a want of the stimulus of more solid materials at the other end of the canal, which

terminates in the stomach, produces hunger; as mentioned in Sect. XIV. 8. The proximate causes of both of them therefore consist in deficient irritation, when they are considered as pains; because these pains are in consequence of the inactivity of the organ, according to the fifth law of animal causation. Sect. IV. 5. But when they are considered as desires, namely, of liquid or solid aliment, their proximate cause consists in the pain of them, according to the sixth law of animal causation. So the proximate cause of the pain of coldness is the inactivity of the organ, and perhaps the consequent accumulation of sensorial power in it; but the pain itself, or the consequent volition, is the proximate cause of the shuddering and gnashing the teeth in cold fits of intermittent fevers. See Class I. 2. 2. 1.

Thirst may be divided into two varieties, alluding to the remote cause of each, and may be termed *fitis calida*, or warm thirst, and *fitis frigida*, or cold thirst. The remote cause of the former arises from the dissipation of the aqueous parts of our fluids by the increased secretion of perspirable matter, or other evacuations. And hence it occurs in hot fits of fever, and after taking much wine, opium, spice, salt, or other drugs of the Art. *incitantia* or *secernentia*. The thirst, which occurs about three hours after eating a couple of red herrings, to a person unaccustomed to salted meat, is of this kind; the increased action of the cutaneous vessels dissipates so much of our fluids

by insensible perspiration, as to require above two quarts of water to restore the fluidity of the blood, and to wash the salt out of the system. See Art. III. 2. 1.

M. M. Cold water. Vegetable acids. Warm bath.

The remote cause of *sitis frigida*, or cold thirst, is owing to the inaction of the cutaneous, pulmonary, urinary, and cellular absorbents; whence the blood is deprived of the great supply of moisture, which it ought to receive from the atmosphere, and from the cells of the cellular membrane, and from other cysts; this cause of thirst exists in dropsies, and in the cold fits of intermittents. The desire of fluids, like that of solids, is liable to acquire periods, and may therefore readily become diseased by indulgence in liquids grateful to the palate.

Of diseased thirst, the most common is either owing to defect of the action of the numerous absorbent vessels on the neck of the bladder, in which the patient makes much paleish water; or to the defective absorption of the skin and lungs, in which the patient makes but little water, and that high-coloured, and with sediment. In both the tongue and lips are liable to become very dry. The former in its greatest degree attends diabetes, and the latter anasarca.

M. M. Warm water, warm wine, warm bath. Opium. Cold bath. Iced water. Lemonade. Cyder.

2. *Esuries*. Hunger has been fancifully ascribed to the sides of the stomach rubbing against each other, and to the increased acidity of the gastric juice corroding the coats of it. If either of these were the cause of hunger, inflammation must occur, when they had continued some time; but, on the contrary, coldness not heat is attendant on hunger; which evinces, that like thirst it is owing to the inactivity of the membrane, which is the seat of it; while the abundant nerves about the cardia ventriculi, and the pain of hunger being felt in that part, gives great reason to conclude, that it is there situated.

The sense of hunger as well as of thirst, is liable to acquire habits in respect to the times of its returning painfulness, as well as in respect to the quantity required to satiate its appetency, and hence may become diseased by indulgence, as well as by want of its appropriate stimulus. Those who have been accustomed to distend their stomach by large quantities of animal and vegetable food, and much potation, find a want of distention, when the stomach is empty, which occasions faintness, and is mistaken for hunger, but which does not appear to be the same sensation. I was well informed, that a woman near Lichfield, who eat much animal and vegetable food for a wager, affirmed, that since distending her stomach so much, she had never felt herself satisfied with food; and had in general taken twice as much at a meal, as she had been accustomed to, before she eat so much for a wager.

3. *Nausea sicca.* Dry nausea. Consists in a quiescence or torpor of the mucous or salivary glands, and precedes their inverted motions, described in nausea humida, Class I. 3. 2. 3. In the same manner as sickness of the stomach is a quiescence of that organ preceding the action of vomiting, as explained in Sect. XXXV. 1. 3. This is sometimes induced by disagreeable drugs held in the mouth, at other times by disgustful ideas, and at other times by the association of these actions with those of the stomach; and thus according to its different proximate causes may belong to this, or to the second, or to the fourth class of diseases.

M. M. Lemonade. Tasteful food. A blister. Warm bath.

4. *Ægritudo ventriculi.* Sickness of stomach is produced by the quiescence or inactivity of that organ, as is explained in Sect. XXXV. 1. 3. It consists in the state between the usual peristaltic motions of that organ, in the digestion of our aliment, and the retrograde motions of it in vomiting; for it is evident, that the direct motions of it from the cardia to the pylorus must stop, before those in a contrary direction can commence. This sickness, like the nausea above described, is sometimes produced by disgustful ideas, as when nasty objects are seen, and nasty stories related, as well as by the exhaustion of the sensorial power by the stimulus of

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some

some emetic drugs, and by the defect of the production of it, as in enfeebled drunkards.

Sickness may likewise consist in the retrograde motions of the lymphatics of the stomach, which regurgitate into it the chyle or lymph, which they have lately absorbed, as in Class I. 3. 2. 3. It is probable, that these two kinds of sickness may be different sensations, though they have acquired but one name; as one of them attends hunger, and the other repletion; though either of them may possibly be induced by association with nauseous ideas.

M. M. A blister on the back. An emetic. Opium. Crude mercury. Covering the head in bed. See Sect. XXV. 16. Class IV. 1. 1. 2. and 3.

5. *Cardialgia*. Heartburn originates from the inactivity of the stomach, whence the aliment, instead of being subdued by digestion, and converted into chyle, runs into fermentation, producing acetous acid. Sometimes the gastric juice itself becomes so acid as to give pain to the upper orifice of the stomach; these acid contents of the stomach, on falling on a marble hearth, have been seen to produce an effervescence on it. The pain of heart at the upper end of the gullet, when any air is brought up from the fermenting contents of the stomach, is to be ascribed to the sympathy between these two extremities of the œsophagus rather than
to

to the pungency of the carbonic gas, or fixed air; as the sensation in swallowing that kind of air in water is of a different kind. See Class I. 3. 1. 3. and IV. 2. 2. 5.

M. M. This disease arising from indigestion is often very pertinacious, and afflicting; and attended with emaciation of the body from want of sufficient chyle. As the saliva swallowed along with our food prevents its fermentation, as appears by the experiments of Pringle and Macbride, some find considerable relief by chewing parched wheat, or mastic, or a lock of wool, frequently in a day, when the pain occurs, and by swallowing the saliva thus effused; a temporary relief is often obtained from antiacids, or aerated alkaline water, Seltzer water, calcareous earths, alkaline salts made into pills with soap, soap alone, tin, milk, bitters. More permanent use may be had from such drugs as check fermentation, as acid of vitriol; but still more permanent relief from such things as invigorate the digestion, as a blister on the back; a due quantity of vinous spirit and water taken regularly. Steel. Temperance. A sleep after dinner. A waistcoat made so tight as slightly to compress the bowels and stomach. A flannel shirt in winter, not in summer. A less quantity of potation of all kinds. Ten black pepper-corns swallowed after dinner. Half a grain of opium twice a day, or a grain. The food should consist of such things as do not easily ferment, as flesh,
shell,

shell-fish, sea-biscuit, toasted cheese. I have seen toasted cheese brought up from the stomach 24 hours after it had been swallowed, without apparently having undergone any chemical change. See Class II. 1. 3. 17. and IV. 1. 2. 13.

It is probable that violent cardialgia is most frequently owing to increase of the quantity or acidity of the gastric juice, rather than to the acetous acid produced by fermenting aliment; because in violent apepsy, as in low fevers, and total want of digestion, no such violently strong or painful acidity occurs. See I. 3. 1. 3. See Anorexia II. 2. 2. 1. And secondly, because in all these cases, which have come under my eye, the disease was not increased by vegetable food, or even by acid fruits, when taken in their usual quantity; and I have uniformly observed, that the food which suited the palate, and that water alone, or small wine and water, agreed with these patients better than stronger mixtures of spirit and water, especially when they were more agreeable to the palate.

6. *Arthritis Ventriculi*. Sickness of the stomach in gouty cases is frequently a consequence of the torpor or inflammation of the liver, and then it continues many days or weeks. But when the patient is seized with great pain at the stomach with the sensation of coldness, which they have called an ice-bolt, this is a primary affection of the stomach, and destroys the patient in a few hours, owing to
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the torpor or inaction of that viscus so important to life.

This primary gout of the stomach, as it is a torpor of that viscus, is attended with sensation of coldness, and with real defect of heat in that part, and may thence be distinguished from the pain occasioned by the passage of a gall-stone into the duodenum, as well as by the weak pulse, and cold extremities; to which must be added, that it affects those only, who have been long afflicted with the gout, and much debilitated by its numerous attacks.

M. M. Opium. Vinous spirit. Volatile alkali. Spice. Warmth applied externally to the stomach by hot cloths or fomentation.

7. *Colica flatulenta*. The flatulent colic arises from the too great distention of the bowel by air, and consequent pain. The cause of this disease is the inactivity or want of sufficiently powerful contraction of the coats of the bowel, to carry forwards the gas given up by the fermenting aliment. It is without fever, and generally attended with cold extremities.

It is distinguished, first, from the pain occasioned by the passage of a gall-stone, as that is felt at the pit of the stomach, and this nearer the navel. Secondly, it is distinguished from the colica saturnina, or colic from lead, as that arising from the torpor of the liver, or of some other viscus, is attended

tended with greater coldness, and with an aching pain; whereas the flatulent colic being owing to distention of the muscles of the bowel, the pain is more acute, and the coldness less. Thirdly, it is distinguished from inflammation of the bowels, or ileus, as perpetual vomiting and fever attend this. Fourthly, it is distinguished from cholera, because that is accompanied with both vomiting and diarrhoea. And lastly, from the colica epileptica, or hysterical colic, as that is liable to alternate with convulsion, and sometimes with insanity; and returns by periods.

M. M. Spirit of wine and warm water, one spoonful of each. Opium one grain. Spice. Volatile alkali. Warm fomentation externally. Rhubarb.

8. *Colica saturnina*. Colic from lead. The pain is felt about the navel, is rather of an aching than acute kind at first, which increases after meals, and gradually becomes more permanent and more acute. It terminates in paralysis, frequently of the muscles of the arm, so that the hand hangs down, when the arm is extended horizontally. It is not attended with fever, or increase of heat. The seat of the disease is not well ascertained; it probably affects some part of the liver, as a pale bluish countenance and deficiency of bile sometimes attend or succeed it, with consequent anasarca; but it seems to be caused immediately by a torpor of the intestine,
whether

whether this be a primary or secondary affection, as appears from the constipation of the bowels, which attends it; and is always produced in consequence of the great stimulus of lead previously used either internally for a length of time, or externally on a large surface.

A delicate young girl, daughter of a dairy farmer, who kept his milk in leaden cisterns, used to wipe off the cream from the edges of the lead with her finger; and frequently, as she was fond of cream, licked it from her finger. She was seized with the saturnine colic, and semi-paralytic wrists, and sunk from general debility.

A feeble woman about forty years of age, sprained her ankle, and bruised her leg and thigh; and applied by ill advice a solution of lead over the whole limb, as a fomentation and poultice for about a fortnight. She was then seized with the colica saturnina, lost the use of her wrists, and gradually sunk under a general debility.

There are various means by which lead finds its way into the system; in the cyder counties of this country this disease has been frequently almost epidemic from the use of some lead about their mills, or by the pernicious use of it to correct the acidity of weak cyder. This disease has been so frequent in some of the wine countries, that in France the punishment of death is directed for those, who use lead to destroy the acidity of wine.

There is a bad custom in almost all families and
public

public houses of washing out their bottles by putting a handful of shot corns into them, and by shaking them about forcibly, by which the lead may in part adhere to the sides of the bottle, and become dissolved in the acid of the wine or cyder. Milk kept in lead is highly pernicious, as in the instance above related. Nor should coppers for brewing be edged at the top of them with lead, which is frequently done; nor should flesh-meat be salted in leaden cisterns. Another way by which lead is liable to be taken into the stomach is by broth, which is boiled in copper vessels tinned within. Now the lining of these vessels consists, I am well informed, of nearly half lead mixed with the tin; which is very soluble in hot grease. From this cause those, who live much on soups long boiled, as the French, are perpetually subject to complaints of the stomach and intestines. When a sauce-pan has been new tinned, if the finger be rubbed hard on it, it becomes black; which is owing to the lead, which is mixed with the tin. Hence the broth for all sick people should be boiled but a short time, and be immediately put into a china-bason.

In an ingenious pamphlet lately published by Mr. Clutterbuck, several cases are given of the successful use of mercury in the constipation, colic, and paralysis of the wrists, produced by lead. In some of these patients a drachm of strong mercurial ointment was rubbed morning and night on the wrists,

wrists, till the mouth became sore. In others calomel one grain was given daily with ol. ricini; and in others a quarter of a grain of hydragyrum muriatum, sublimated of mercury, was given three times a day with great apparent advantage. The author ingeniously asks, if small doses of some preparation of lead, might not be given internally to counteract the ill effects sometimes believed to result from the too long use of mercury. On the Poison of Lead, Boosey, Lond. See Class III. 2.

I. 4.

The effect of metals in destroying or preventing the acidity of wine or cyder, may be nicely observed in attending to the colour of syrup of violets; which, if it ferments, is changed by the acid thus produced from blue to red: but if it be kept in a tin vessel, this does not occur; as the acid is attracted by the metal producing an oxyde. Other metals are said by M. Guyton, to have the same effect in preserving the colour of syrup of violets.

M. M. First opium one or two grains, then a cathartic of senna, jalap, and oil, as soon as the pain is relieved. Oleum ricini. Alum. Oil of almonds. A blister on the navel. Warm bath. The stimulus of the opium, by restoring to the bowel its natural irritability in this case of painful torpor, assists the action of the cathartic. A clyster of the smoke of tobacco pushed high up and continued, or repeated frequently for an hour or two,
or

or longer, is said to remove the pain, and totally to cure the disease.

9. *Tympanitis*. Tympany consists in an elastic tumor of the abdomen, which sounds on being struck. It is generally attended with costiveness and emaciation. In one kind the air is said to exist in the bowels, in which case the tumor is less equal, and becomes less tense and painful on the evacuation of air. In the other kind the air exists in the cavity of the abdomen, and sometimes is in a few days exchanged for water, and the tympany becomes an ascites.

Air may be distinguished in the stomach of many people by the sound on striking it with the fingers, and comparing the sound with that of a similar percussion on other parts of the bowels: but towards the end of fevers, and especially in the puerperal fever, a distention of the abdomen by air is generally a fatal symptom, though the ease, and often cheerfulness of the patient, vainly flatters the attendants.

M. M. In the former case a clyster-pipe unarmed may be introduced, and left some time in the rectum, to take off the resistance of the sphincter, and thus discharge the air, as it is produced from the fermenting or putrefying aliment. For this purpose, in a disease somewhat similar in horses, a perforation is made into the rectum on one side of the sphincter;

sphincter; through which fistula the air, which is produced in such great excess from the quantity of vegetable food which they take, when their digestions are impaired, is perpetually evacuated. In both cases also, balsams, essential oil, spice, bandage on the abdomen, and, to prevent the fermentation of the aliment, acid of vitriol, saliva. See Class I. 2. 4. 5.

10. *Hypochondriasis*. The hypochondriac disease consists in indigestion and consequent flatulency, with anxiety or want of pleasurable sensation. When the action of the stomach and bowels is impaired, much gas becomes generated by the fermenting or putrescent aliment, and to this indigestion is catenated languor, coldness of the skin, and fear. For when the extremities are cold for too long a time in some weak constitutions, indigestion is produced by direct sympathy of the skin and the stomach, with consequent heartburn, and flatulency. The same occurs, if the skin be made cold by fear, as in riding over dangerous roads in winter, and hence conversely fear is produced by indigestion or torpor of the stomach by association.

This disease is confounded with the fear of death, which is an insanity, and therefore of a totally different nature. It is also confounded with the hysterical disease, which consists in the retrograde mo-

tions of the alimentary canal, and of some parts of the absorbent system.

The hypochondriasis, like chlorosis, is sometimes attended with very quick pulse; which the patient seems to bear so easily in these two maladies, that if an accidental cough attends them, they may be mistaken for pulmonary consumption; which is not owing primarily to the debility of the heart, but to its direct sympathy with the actions of the stomach.

M. M. Blister. A plaster of Burgundy pitch on the abdomen. Opium a grain twice a day. Rhubarb six grains every night. Bark. Steel. Spice. Bath-water. Siesta, or sleep after dinner. Uniform hours of meals. No liquor stronger than small beer, or wine and water. Gentle exercise on horseback in the open air uniformly persisted in. See Cardialgia, I. 2. 4. 5.

11. *Cephalæa idiopathica*. Head-achs, which are attended with inflammation, are termed phrenitis, described in Class II. 1. 2. 3. Those, which are not attended with inflammation, may be divided into such as affect the whole head, to which the word cephalæa is applied, and into such as affect one side of the head only at a time, which is termed hemicrania. The former of these may be divided into cephalæa idiopathica, and cephalæa sympathetica; and the latter into hemicrania idiopathica, and hemicrania sympathetica. Besides these

these there exists a cephalæa somniosa, a cephalæa syphilitica, and a cephalæa hydropica.

The idiopathic head-ach frequently attends the cold paroxysm of intermittents; afflicts inebriates the day after intoxication; and many people who remain too long in the cold bath. In all which cases there is a general inaction of the whole system, and as these membranes about the head have been more exposed to the variations of heat and cold of the atmosphere, they are more liable to become affected so far as to produce sensation, than other membranes; which are usually covered either with clothes, or with muscles, as mentioned in Sect. XXXIII. 2. 10.

The promptitude of the membranes about the scalp to sympathize with those of other parts of the system is so great, that this cephalæa without fever, or quickness of pulse, is more frequently a secondary than a primary disease, and then belongs to Class IV. 2. 2. 7. The hemicrania, or partial head-ach, I believe to be almost always a disease from association; though it is not impossible, but a person may take cold on one side of the head only. As some people by sitting always on the same side of the fire in winter are liable to render one side more tender than the other, and in consequence more subject to pains, which have been erroneously termed rheumatic.

M. M. The method of cure consists in rendering the habit more robust, by gentle constant ex-

ercise in the open air, flesh diet, small beer at meals with one glass of wine, regular hours of rest and rising, and of meals. The clothing about the head should be warmer during sleep than in the day; because at that time people are more liable to take cold; that is, the membranous parts of it are more liable to become torpid; as explained in Sect. XVIII. 15. In respect to medicine, two drams of valerian root in powder three or four times a day are recommended by Fordyce. The bark. Steel in moderate quantities. An emetic. A blister. Opium, half a grain twice a day. Decayed teeth should be extracted, particularly such as either ache, or are useless. Cold bath between 60 and 70 degrees of heat. Warm bath of 94 or 98 degrees every day for half an hour during a month. See Class IV. 2. 2. 7. and 8. and IV. 2. 4. 3.

A solution of arsenic, about the sixteenth part of a grain, is reported to have great effect in this disease. It should be taken thrice a day, if it produces no griping or sickness, for two or three weeks. A medicine of this kind is sold under the name of tasteless ague-drops; but a more certain method of ascertaining the quantity is delivered in the preceding Materia Medica, Art. IV. 2. 6. 8. Five grains of the powdered leaves of *Atropa Belladonna* are recommended in some foreign publication to be repeated once in two days,
and

and are said to be successful in the dolor faciei, or hemicrania idiopathica.

Cephalæa somniosa. Head-ach from sleep. This disease has not been described, I believe, by any writer, though it affects some invalides for years. After some hours of sleep the patients are afflicted with distressing dreams, and awake with pain of the head, which continues for some time after they awake; and so circumstanced furnishes the diagnostic symptom of this species of cephalæa.

The paroxysms or repetitions of many diseases are liable to commence in sleep, some from the increase of sensibility during sleep, as explained in Sect. XVIII. 5. and 15. of the first part of this work, as those of some epilepsies, of some asthmas, and of the gout. Other diseases are liable to return during sleep from the debility of the pulmonary circulation, or of pulmonary absorption, as in somnus interruptus, Class I. 2. 1. 3. and in incubus, or night-mare, Class III. 2. 1. 13. and in hæmoptoe venosa, Class I. 2. 1. 9. and probably in the humoral asthma, Class II. 1. 1. 8.

The cephalæa somniosa I suspect to bear the same analogy to the hydrocephalus internus, as I believe the asthma humorale to bear to the anasarca pulmonum; and to consist in this circumstance, that during sleep in the cephalæa somniosa a temporary congestion of fluid may occur in some part of the brain, as a permanent one

occurs in the hydrocephalus internus; in the same manner as I believe in the asthma humorale a temporary congestion of fluid occurs in some part within the chest, and a permanent one in the anasarca of the lungs.

M. M. The patient should sleep with his head raised high on many pillows, and wear drawers to prevent his slipping down in bed. 2. He should sleep on a hardish bed, or mattress, to prevent his sleeping too profoundly, or too long together. 3. Or he may be wakened, after having slept a certain number of hours, by an alarm clock. 4. Any carious teeth should be extracted, as the matter from putrid bones, swallowed with the saliva, weakens the system by its effect on the stomach. 5. Twenty drops of saturated tincture of digitalis may be taken twice or thrice a day for three or four weeks. 6. Half a grain of opium and six grains of rhubarb should be taken every night for many weeks or months. 7. Oxygen gas may be respired daily for a time, till its effect can be known.

12. *Hemicrania idiopathica*. This disease is described by Sauvages under the name of trismus dolorificus, or tic douloureux, in Class IV. ord. 1. gen. 2. spec. 14. of his elaborate work. But the word trismus is an improper name, as no fixed spasm like the locked jaw exists in this malady, nor any stridor dentium, or convulsion of the muscles of

of the face, or trick, attends these patients in the few cases which I have witnessed, though this may possibly occur occasionally as the consequence of disagreeable sensation, or to relieve it. I suppose the word *tic douloureux* is a vulgar French expression, like *megrim* in English.

The cause of this afflicting disease is yet unknown. As it does not appear to sympathize with a diseased tooth, like the *hemicrania sympathetica*, described in Class IV. 2. 2. 8. I suspect the cause to consist in a diseased state of the nerve itself, or of its covering or *theca*, and to resemble the *sciatica frigida*, mentioned below; or to resemble some of those pains, which are succeeded or relieved by epileptic convulsions, described in Class III. 1. 1. 8. and that it thus differs from the *hemierania sympathetica*; as in this the cause of the disease, and the seat of the pain, exist in the same place.

One case, which occurred to me long ago, of this disease, was of an elderly gentleman, Mr. W. of Lichfield, who had long lost all his teeth; the pain began chiefly about the cheek-bone, and extended sometimes to the ala of the nose, and to other parts of the face on the same side; on examining the gums of the upper jaw, there was no suspicion of any stump of a decayed tooth remaining in the alveolar processes; nor was there any reason to suspect any disease of the maxillary sinus. Whence this did not appear to be any kind

of sympathetic hemicrania. He was afflicted with it for many years till his death.

The case of Mr. B. a gentleman between 20 and 30 years of age, whom I was lately concerned for, in this disease, is well worthy a minute description; I shall therefore copy a letter, which I wrote on his case to Mr. Cruikshank, and an answer I received some time after from his partner, Mr. Leigh Thomas, who I hope will publish the successful method of cure, with adapted prints.

To Mr. Cruikshank.

Sir,

Derby, Dec. 1798.

Mr. Bosworth, whose case I wish to remind you of, consulted you some time ago in London, and I believe that you then told him, that his head-ach was owing to a disease of the third branch of the fifth pair of nerves. He came under my care at Derby a few weeks ago, and complained of much pain about the left cheek-bone; I suspected the antrum maxillare might be diseased, and as the second of the dentes molares had then been lately extracted, I desired a perforation might be made into the antrum, which was done by Mr. Hadley, of this town, and kept open for two or three days without advantage. Afterwards, by friction about the head and neck with mercurial unguent, he was copiously salivated for a few days, and had
another

another tooth extracted by his own desire, and had lastly an incision made by Mr. Hadley, so as to divide the artery near the centre of the ear next the cheek, hoping to divide a branch of the affected nerve, but without success; and internally, opiates in large quantity were given, when the pain was exceedingly violent, the bark also was used for a time in large quantity without effect.

On attending, as much as I could, to his sensations when in pain, he seems to express the commencement of the periods of pain to exist about the part of the left cheek before the middle of the ear; and then draws his finger from thence to the fore part of the lower jaw sometimes, and to the ala of the nose on that side; and at other times he draws his finger from the same part of the cheek before the ear upwards to the orbit of the eye, and from thence downwards, a little way on the nose; and also he complains of pain under his tongue on the same side. The pain returns many times in an hour on some days, and continues many minutes, during which he seems to stretch and exert his arms, and appears to have a tendency to epileptic actions; and his life is thus miserable to himself, and uncomfortable for his friends to witness.

I write this to you to beg that you will acquaint Mr. Bosworth, whether you think you could divide by incision the diseased nerve; as he is willing to undergo such an operation, if you think it practicable,

ticable, as I believe it to be the only means, which promises to cure him; and have therefore advised him again to apply to you; and if you think this can be done with effect, he designs to wait on you in London.

I am, sir, &c,

E. DARWIN.

The following answer of Mr. Leigh Thomas shews the disease to have existed in every branch of the affected nerve.

Sir,

Leicester-square, May, 1799.

About the middle of December last, you did Mr. Cruikshank the favour to write him an account of Mr. Bosworth, a young gentleman, some time under your care at Derby, with a painful affection of the nerves of his face. The patient soon after came to town in a much worse state, than you described him to be at that time; as the pain was extremely acute and almost unremitting, opiates, which he had been in the habit of taking occasionally, afforded him now little or no relief, though taken to the quantity of six tea-spoonfuls of laudanum at a time. After paying every attention to the case, your suggestion of the necessity of dividing the diseased nerve appeared obvious.

As the pain was felt more acute in the left ala of the nose, and the upper lip of the same side,

we

we were induced to divide the second branch of the fifth pair of nerves, as it passes out at the infra-orbital foramen. He was instantly relieved in the nose and lip; but towards night the pain from the eye to the crown of the head became more acute than ever. Two days after, we were obliged to cut through the first branch passing out at the supra-orbital foramen; this afforded him the like relief with the first. On the same day the pain attacked, with great violence, the lower lip on the left side, and the chin; this circumstance induced the necessity of dividing the third branch passing out at the foramen mentale. During the whole period, from the first division of the nerves, he had frequent attacks of pain on the side of the tongue; these however disappeared on division of the last nerve.

Mr. Cruikshank performed the above operations, but being particularly engaged at this time with lectures and other business, he now gave up the case to my management. The patient was evidently bettered by each operation; still the pain was very severe, passing from the ear under the zygoma towards the nose and mouth, and upwards round the orbit. This route proved pretty clearly, that the portio dura of the auditory nerve was also affected; at least the uppermost branch of the pes anserinus. Before I proceeded to divide this, I was willing to try the effect of arsenic internally,
and

and he took it in sufficient quantity to excite nausea and vertigo, but without perceiving any good effect.

I could now trust only to the knife to alleviate his misery, as the pain round the orbit was become most violent; and therefore intercepted the nerve by an incision across the side of the nose, and also made some smaller incisions about the ala nasi. To divide the great branch lying below the zygomatic process, I found it necessary to pass the scalpel through the masseter muscle, till it came in contact with the jaw-bone, and then to cut upwards; this relieved him as usual. Then the lower branch was affected, and also divided: then the middle branch running under the parotid gland. In cutting this, the gland was consequently divided into two equal parts, and healed tolerably well after a copious discharge of saliva for several days.

I hoped and expected, that this last operation would have terminated his sufferings and my difficulties; but the pain still affected the lower lip and side of the nose, and upon coughing, or swallowing, his misery was dreadful. This pain could only arise from branches from the second of the fifth pair passing into the cheek, and lying between the pterygoideus internus muscle, and the upper part of the lower jaw. The situation of this nerve rendered the operation hazardous, but after some attempts

attempts it was accomplished, and this day he set out for Leicestershire perfectly restored.

I am, sir, &c.

LEIGH THOMAS.

Since I wrote the above, I have seen an equally deplorable and instructive case, of hemicrania idiopathica, of an elderly person, described by Dr. Haighton, under the name of tic douloureux, with an equally successful cure, by dividing the diseased nerves. Medical Records and Researches. Cox, London.

Two cases of tic douloureux are related by a Dr. Watson, in the *Recueil périodique de Médecine*, Paris, 1798, tom. IV. which are said to have submitted to mercurial frictions and warm bathing. These pains were probably venereal symptoms, as the author suspects; but would persuade us again to try the use of mercury, though it failed in the case above related, and especially as it sometimes succeeds in the hemicrania sympathetica, as mentioned in Class IV. 2. 2. 8. Five grains of the powdered leaf of belladonna are said to have been successful. See *Cephalæa idiopathica*.

13. *Odontalgia*. Tooth-ach. The pain has been erroneously supposed, where there is no inflammation, to be owing to some acrid matter from a carious tooth stimulating the membrane of the alveolar process into violent action and consequent

quent pain; but the effect seems to have been mistaken for the cause, and the decay of the tooth to have been occasioned by the torpor and consequent pain of the diseased membrane.

First, because the pain precedes the decay of the tooth in regard to time, and is liable to recur, frequently for years, without certainly being succeeded at last by a carious tooth, as I have repeatedly observed.

Secondly, because any stimulant drug, as pyrethrum, or oil of cloves, applied to the tooth, or ether applied externally to the cheek, is so far from increasing the pain, as it would do if the pained membrane already acted too strongly, that it frequently gives immediate relief like a charm.

And thirdly, because the torpor, or deficient action of the membrane, which includes the diseased tooth, occasions the motions of the membranes most connected with it, as those of the cheek and temples, to act with less than their natural energy; and hence a coldness of the cheek is perceived easily by the hand of the patient, comparing it with the other cheek; and the pain of hemicrania is often produced in the temple of the affected side.

This coldness of the cheek in common tooth-ach evinces, that the pain is not then caused by inflammation; because in all inflammations so much heat is produced in the secretions of new vessels and fluids, as to give heat to the parts in the vicinity.

vicinity. And hence, as soon as the gum swells and inflames along with the cheek, heat is produced, and the pain ceases, owing to the increased exertions of the torpid membrane, excited by the activity of the sensorial power of sensation; which previously existed in its passive state in the painful torpid membrane. See Odontitis, Class II. 1. 4. 7. and IV. 2. 2. 8.

M. M. If the painful tooth be found, venesection. Then a cathartic. Afterwards two grains of opium. Camphor and opium, one grain of each held in the mouth; or a drop or two of oil of cloves put on the painful tooth. Ether. If the tooth has a small hole in it, this should be widened within by an instrument, and then stopped with leaf-gold, or leaf-lead; but the tooth should be extracted, if much decayed. It is probable that half a small drop of a strong solution of arsenic, put carefully into the hollow of a decayed aching tooth, would destroy the nerve without giving any additional pain; but this experiment requires great caution, lest any of the solution should touch the tongue or gums.

Much cold and much heat are equally injurious to the teeth, which are endued with a fine sensation of this universal fluid. The best method of preserving them is by the daily use of a brush, which is not very hard, with warm water and fine charcoal dust. A lump of charcoal should be put a second time into the fire till it is red hot, as soon

as

as it becomes cool the external ashes should be blown off, and it should be immediately reduced to fine powder in a mortar, and kept close stopped in a phial. It takes away the bad smell from decayed teeth, by washing the mouth with this powder diffused in water, immediately. The putrid smell of decaying stumps of teeth may be destroyed for a time by washing the mouth with a weak solution of alum in water. If the calcareous crust upon the teeth adheres very firmly, a fine powder of pumice-stone may be used occasionally, or a tooth-instrument.

Acid of sea-salt, much diluted, may be used; but this very rarely, and with the greatest caution, as in cleaning sea-shells. When the gums are spongy, they should be frequently pricked with a lancet. Should black spots in teeth be cut out? Does the enamel grow again when it has been perforated or abraded?

Otalgia. Ear-ach sometimes continues many days without apparent inflammation, and is then frequently removed by filling the ear with laudanum, or with ether; or even with warm oil, or warm water. See Class II. 1. 4. 8. This pain of the ear, like hemicrania, is frequently the consequence of association with a diseased tooth; in that case the ether should be applied to the cheek over the suspected tooth, or a grain of opium and as much camphor mixed together, and applied to the
suspected

suspected tooth. In this case the otalgia belongs to the fourth class of diseases.

14. *Pleurodyne chronica*. Chronical pain of the side. Pains of the membranous parts, which are not attended with fever, have acquired the general name of rheumatic; which should, nevertheless, be restricted to those pains which exist only when the parts are in motion, and which have been left after inflammation of them; as described in Class I. 1. 3. 12. The pain of the side here mentioned affects many ladies, and may possibly have been owing to the pressure of tight stays, which has weakened the action of the vessels composing some membranous part, as, like the cold head-ach, it is attended with present debility; in one patient, a boy about ten years old, it was attended with daily convulsions, and was supposed to have originated from worms. The disease is very frequent, and generally withstands the use of blisters on the part; but in some cases I have known it removed by electric shocks repeated every day for a fortnight through the affected side.

Pains of the side may be sometimes occasioned by the adhesion of the lungs to the pleura, after an inflammation of them; or to the adhesion of some abdominal viscera to their cavity, or to each other; which also are more liable to affect ladies from the unnatural and ungraceful pressure of tight stays, or by sitting or lying too long in one posture. But

in these cases the pain should be more of the smarting, than of the dull kind.

M. M. Ether. A blister. A plaster of Burgundy pitch. An issue or seton on the part. Electric shocks. Friction on the part with oil and camphor. Loose dress. Frequent change of posture both in the day and night. Internally, opium, valerian, bark.

15. *Sciatica frigida*. Cold sciatica. The pain along the course of the sciatic nerve, from the hip quite down to the top of the foot, when it is not attended with fever, is improperly termed either rheumatism or gout; as it occurs without inflammation, is attended with pain when the limb is at rest; and as the pain attends the course of the nerve, and not the course of the muscles, or of the fascia, which contains them. The theory of Cottunius, who believed it to be a dropsy of the sheath of the nerve, which was compressed by the accumulated fluid, has not been confirmed by dissection. The disease seems to consist of a torpor of this sheath of the nerve, and the pain seems to be in consequence of this torpor. See Class II. 1. 2. 17.

M. M. Venesection. A cathartic. And then one grain of calomel and one of opium every night for ten successive nights. And a blister, at the same time, a little above the knee-joint on the outside of the thigh, where the sciatic nerve is not
so

so deep seated. Warm bath. Cold bath. Cover the limb with oiled silk, or with a plaster-bandage of emplastrum de minio.

16. *Lumbago frigida*. Cold lumbago. When no fever or inflammation attends this pain of the loins, and the pain exists without motion, it belongs to this genus of diseases, and resembles the pain of the loins in the cold fit of ague. As these membranes are extensive, and more easily fall into quiescence, either by sympathy, or when they are primarily affected, this disease becomes very afflicting, and of great pertinacity. See Class II. 1. 2. 17.

M. M. Venesection. A cathartic. Issues on the loins. Adhesive plaster on the loins. Blister on the os sacrum. Warm bath. Cold bath. Remove to a warmer climate in the winter. Loose dress about the waist. Friction daily with oil and camphor.

17. *Hysteralgia frigida*. Cold pain of the uterus preceding or accompanying menstruation. It is attended with cold extremities, want of appetite, and other marks of general debility.

M. M. A clyster of half a pint of gruel, and 30 drops of laudanum; or a grain of opium and six grains of rhubarb every night. To sit over warm water, or go into a warm bath.

18. *Proctalgia frigida*. Cold pain at the bottom of the rectum previous to the tumor of the piles, which sometimes extends by sympathy to the loins; it seems to be similar to the pain at the beginning of menstruation, and is owing to the torpor or inirritability of the extremity of the alimentary canal, or to the obstruction of the blood in its passage through the liver, when that viscus is affected, and its consequent delay in the veins of the rectum, occasioning tumors of them, and dull sensations of pain.

M. M. Calomel. A cathartic. Spice. Clyster, with 30 drops of laudanum. Sitting over warm water. If chalybeates after evacuation? See Class I. 2. 3. 23. and I. 2. 1. 6.

19. *Vesicæ felleæ inirritabilitas*. The inirritability of the gall bladder probably occasions one kind of *iæterus*, or jaundice; which is owing to whatever obstructs the passage of bile into the duodenum. The jaundice of aged people, and which attends some fevers, is believed to be most frequently caused by an irritative palsy of the gall-bladder; on which account the bile is not pressed from the cyst by its contraction, as in a paralysis of the urinary bladder.

A thickening of the coats of the common bile-duct by inflammation or increased action of their vessels so as to prevent the passage of the bile into the intestine, in the same manner as the membrane,
which

which lines the nostrils, becomes thickened in catarrh so as to prevent the passage of air through them, is probably another frequent cause of jaundice, especially of children; and generally ceases in about a fortnight, like a common catarrh, without the aid of medicine; which has given rise to the character, which charms have obtained in some countries for curing the jaundice of young people.

The spissitude of the bile is another cause of jaundice, as mentioned in Class I. 1. 3. 8. This also in children is a disease of little danger, as the gall-ducts are distensible, and will the easier admit of the exclusion of gall-stones; but becomes a more serious disease in proportion to the age of the patient, and his habits of life in respect to spirituous potation.

A fourth cause of jaundice is the compression of the bile-duct by the enlargement of an inflamed or scirrhus liver; this attends those who have drunk much spirituous liquor, and is generally succeeded by dropy and death.

M. M. Repeated emetics. Mild cathartics. Warm bath. Electricity. Bitters. Then steel, which, when the pain and inflammation are removed by evacuations, acts like a charm in removing the remainder of the inflammation, and by promoting the absorption of the new vessels or fluids; like the application of any acrid eye-water at the end of ophthalmia; and thus the thickened coats of the bile-duct become reduced, or the enlargement

of the liver lessened, and a free passage is again opened for the bile into the intestine. Ether with yolk of egg is recommended, as having a tendency to dissolve inspissated bile. And a decoction of madder is recommended for the same purpose; because the bile of animals, whose food was mixed with madder, was found always in a dilute state. Aerated alkaline water, or Seltzer water. Raw cabbage, and other acrid vegetables, as water-cresses, mustard. Horses are said to be subject to inspissated bile, with yellow eyes, in the winter season, and to get well as soon as they feed on the spring grass.

The largest bile-stone I have seen was from a lady, who had parted with it some years before, and who had abstained above ten years from all kinds of vegetable diet to prevent, as she supposed, a colic of her stomach, which was probably a pain of the biliary duct; on resuming the use of some vegetable diet, she recovered a better state of health, and formed no new bilious concretions.

A strong aerated alkaline water is sold by J. Schweppe, No. 8, King-street, Holborn. See Class I. 1. 3. 10.

20. *Pelvis renalis inirritabilitas*. Inirritability of the pelvis of the kidney. When the nucleus of a stone, whether it be inspissated mucus, or other matter, is formed in the extremity of any of the tubuli uriniferi, and being detached from thence
falls

falls into the pelvis of the kidney, it is liable to lodge there from the want of due irritability of the membrane; and in that situation increases by new appositions of indurated animal matter, in the same manner as the stone of the bladder. This is the general cause of hæmorrhage from the kidney; and of obtuse pain in it on exercise; or of acute pain, when the stone advances into the ureter. See Class I. 1. 3. 9.

ORDO II.

Decreased Irritation.

GENUS V.

Decreased Action of the Organs of Sense.

SPECIES.

1. *Stultitia inirritabilitas*. Folly from inirritability. Dulness of perception. When the motions of the fibrous extremities of the nerves of sense are too weak, to excite sensation with sufficient quickness and vigour. The irritative ideas are nevertheless performed, though perhaps in a feeble manner, as such people do not run against a post, or walk into a well. There are three other kinds of folly; that from deficient sensation, from deficient volition, and from deficient association, as will be mentioned in their places. In delirium, reverie, and sleep, the power of perception is abolished from other causes.

2. *Visus imminutus*. Diminished vision. In our approach to old age our vision becomes imperfect, not only from the form of the cornea, which becomes less convex, and from its decreased transparency mentioned in Class I. 1. 3. 14; but also from the decreased irritability of the optic nerve.

Thus,

Thus, in the inirritative or nervous fever, the pupil of the eye becomes dilated; which in this, as well as in the dropfy of the brain, is generally a fatal symptom. A part of the cornea as well as a part of the albuginea in these fevers is frequently seen during sleep; which is owing to the inirritability of the retina to light, or to the general paresis of muscular action, and in consequence to the less contraction of the sphincter of the eye, if it may be so called, at that time.

In some eyes there is an inaptitude to adapt themselves to the perception of objects at different distances, which I suppose may be owing to the inirritability of those muscular fibres, which constitute the ciliary process, so well described and explained by Dr. Porterfield, and in the Scots Medical Essays, and so elegantly seen in a dissected eye. It was formerly believed, and has indeed lately been again pretended, that the focus of the crystalline humour was adapted to objects at different distances by a change of the shape of the whole eye by the action of the external muscles, which are inserted into the tunica albuginea, and give motion to it in every direction: but in answer to this may be observed, that if the common actions of the muscles affected the focus of the eye, every motion of the eye-ball, when we attend to objects at any distance, must disturb our vision. At the same time though it is possible, that a violent action of all the muscles together, so as to counter-

balance

balance each other, and keep the eye motionless, as when we look painfully at a very distant object, may in some degree affect the form of it; yet that the contraction of the ciliary process perpetually adapts the focus of the crystalline lens to the distance of the retina is not to be disputed.

There have been instances of some, who could not distinguish certain colours; and yet whose eyes, in other respects, were not imperfect. *Philos. Transact.* Which seems to have been owing to the want of irritability, or the inaptitude to action, of some classes of fibres which compose the retina. Other permanent defects depend on the diseased state of the external organ. *Class I. 1. 3. 14. I. 2. 2. 13. IV. 2. 1. 11.*

3. *Muscae volitantes.* Dark spots appearing before the eyes, and changing their apparent place with the motions of the eyes, are owing to a temporary defect of irritability of those parts of the retina, which have been lately exposed to more luminous objects than the other parts of it, as explained in *Sect. XL. 2.* Hence dark spots are seen on the bed-clothes by patients, when the optic nerve is become less irritable, as in fevers with great debility; and the patients are perpetually trying to pick them off with their fingers to discover what they are; for these parts of the retina of weak people are sooner exhausted by the stimulus

lus of bright colours, and are longer in regaining their irritability.

Other kinds of ocular spectra, as the coloured ones, are also more liable to remain in the eyes of people debilitated by fevers, and to produce various hallucinations of sight. For after the contraction of a muscle, the fibres of it continue in the last situation, till some antagonist muscles are exerted to retract them; whence, when any one is much exhausted by exercise, or by want of sleep, or in fevers, it is easier to let the fibres of the retina remain in their last situation, after having been stimulated into contraction, than to exert any antagonist fibres to replace them.

As the optic nerves at their entrance into the eyes are each of them as thick as a crow-quill, it appears that a great quantity of sensorial power is expended during the day in the perpetual activity of our sense of vision, besides that used in the motions of the eye-balls and eye-lids; as much I suppose as is expended in the motions of our arms, which are supplied with nerves of about the same diameters. From hence we may conclude, that the light should be kept from patients in fevers with debility, to prevent the unnecessary exhaustion of the sensorial power. And that on the same account their rooms should be kept silent as well as dark; that they should be at rest in a horizontal posture; and be cooled by a blast of cool air, or by washing them
with

with cold water, whenever their skins are warmer than natural.

4. *Strabismus*. Squinting is generally owing to one eye being less perfect than the other ; on which account the patient endeavours to hide the worst eye in the shadow of the nose, that his vision by the other may not be confused. Calves, which have an hydatide with insects inclosed in it in the frontal sinus on one side, turn towards the affected side ; because the vision on that side, by the pressure of the hydatide, becomes less perfect ; and the disease being recent, the animal turns round, expecting to get a more distinct view of objects.

In the hydrocephalus internus, where both eyes are not become insensible, the patient squints with only one eye, and views objects with the other, as in common strabismus. In this case it may be known on which side the disease exists, and that it does not exist on both sides of the brain ; in such circumstances, as the patients I believe never recover as they are now treated, might it not be advisable to perforate the cranium over the ventricle of the affected side ? which might at least give room and stimulus to the affected part of the brain ?

M. M. If the squinting has not been confirmed by long habit, and one eye be not much worse than the other, a piece of gauze stretched on a circle of whale-

whale-bone, to cover the best eye in such a manner as to reduce the distinctness of vision of this eye to a similar degree of imperfection with the other, should be worn some hours every day. Or the better eye should be totally darkened by a tin cup covered with black silk for some hours daily, by which means the better eye will be gradually weakened by the want of use, and the worse eye will be gradually strengthened by using it. Covering an inflamed eye in children for weeks together, is very liable to produce squinting, for the same reason.

5. *Amaurosis*. *Gutta serena*. Is a blindness from the inirritability of the optic nerve. It is generally esteemed a palsy of the nerve, but should rather be deemed the death of it, as paralysis has generally been applied to a deprivation only of voluntary power. This is a disease of dark eyes only, as the cataract is a disease of light eyes only. At the commencement of this disease, very minute electric shocks should be repeatedly passed through the eyes; such as may be produced by putting one edge of a piece of silver the size of a half crown piece beneath the tongue, and one edge of a piece of zinc of a similar size between the upper lip and the gum, and then repeatedly bringing their exterior edges into contact, by which means very small electric sparks become visible in the eyes.

Mrs. T— had for some weeks complained of imperfect sight. For the last fortnight she could
not

not in less than a minute spell out a single word in a large print. Her eyes black, and the pupils large. Very slight electric shocks, not sparks, were passed through the forepart of her forehead twice a day, and the zinc and silver pencils as mentioned below were used many times a day. She took valerian and columbo internally, and regained her sight very perfectly in about three weeks.

I used in the above case a more convenient and efficacious method of galvanism by employing two rods, one of them of zinc about the size of a writing pencil, and the other a silver pencil-case about the same size; and by putting the end of the zinc rod in contact with the external corner of one eye, and the end of the silver pencil-case in contact with the external corner of the other eye, and then repeatedly making the other ends touch each other; sparks will be visible in the eyes both at the time of contact and at the time of separation of the two rods. This experiment was published by Volta since the former one by Galvani. See Sect. XIV. 5. of Vol. I.

A foreign physician, professor Arnemann, has lately recommended the production of vertigo in gutta serena, as he says, to accumulate more blood in the head. If this should be really found of advantage the patient might lie on a large mill-stone, which might be suffered to turn slowly, but a very great velocity of the whirling stone might occasion sleep, apoplexy, and death. See Supl. I. 15. 7.

M. M. Minute

M. M. Minute electric shocks. A grain of opium, and a quarter of a grain of corrosive sublimate of mercury, twice a day for four or six weeks. Blister on the crown of the head. Er-rhines, so as to induce violent sneezing twice a day for a week.

6. *Auditus imminutus*. Diminished hearing. Deafness is a frequent symptom in those inflammatory or sensitive fevers with debility, which are generally called putrid; it attends the general stupor in those fevers, and is rather esteemed a salutary sign, as during this stupor there is less expenditure of sensorial power.

In fevers of debility without inflammation, called nervous fevers, I suspect deafness to be a bad symptom, arising, like the dilated pupil, from a partial paralysis of the nerve of sense. See Class IV. 2. 1. 15.

Nervous fevers are supposed by Dr. Gilchrist to originate from a congestion of serum or water in some part of the brain, as many of the symptoms are so similar to those of hydrocephalus internus, in which a fluid is accumulated in the ventricles of the brain; on this idea the inactivity of the optic or auditory nerves in these fevers may arise from the compression of the effused fluid; while the torpor attending putrid fever may depend on the meninges of the brain being thickened

ed by inflammation, and thus compressing it; now the new vessels, or the blood, which thickens inflamed parts, is more frequently re-absorbed, than the effused fluid from a cavity; and hence the stupor in one case is less dangerous than in the other.

In inflammatory or sensitive fevers with debility, deafness may sometimes arise from a greater secretion and absorption of the ear-wax, which is very similar to the bile, and is liable to fill the meatus auditorius, when it is too viscid, as bile obstructs the gall-ducts.

M. M. In deafness without fever, Dr. Darwin applied a cupping-glass on the ear with good effect, as described in *Phil. Trans.* Vol. LXIV. p. 348. Oil, ether, laudanum, dropped into the ears. Errhines. Electricity.

If ether when dropped into the ears be not very pure, it is liable to give pain; it has otherwise the property both of dissolving the ear-wax, and of stimulating torpid parts into their accustomed activity, as is known from its relieving pains from inactivity of the pained part, as tooth-ach and head-ach. If unrectified ether be distilled from the oxyde of manganese, the oxygen disengaged from the manganese is asserted to convert the sulphurous into sulphuric acid, which is then not disposed to rise in distillation. *Journal de Physique*, April, 1798. And that this is the great secret of
of

of procuring pure ether, and it will then give no pain on being dropped into the ear. See Art. II.

2. 3.

Deafness is believed sometimes to arise from obstruction of the Eustachian tubes, which communicate from the fauces to the internal ear behind the tympanum; if this obstruction be slight, as by inspissated mucus, it has been proposed to inject the Eustachian tubes; and it is said, that if the deaf person frequently has recourse to the simple action of shutting his mouth and of closing his nostrils by pinching them together with his finger and thumb, and then forcibly endeavours to press the breath through his nose, that air will pass into the internal ear through the Eustachian tubes, condensing that air which exists behind the tympanum; which the patient will himself be sensible of, by a sensation of sound in his ears. And that this has relieved many.

Where an eruption occurs in the ear, followed by a dry scale or scab at the bottom of the meatus auditorius, a solution of corrosive sublimate of mercury, hydrargyrus muriatus, about one grain to an ounce of water, dropped into the ear, frequently has been used with advantage by Dr. Darwin of Shrewsbury. See Class IV. 2. 1. 15.

7. *Olfæctus imminutus*. Inactivity of the sense of smell. From our habits of trusting to the art of cookery, and not examining our food by the

smell as other animals do, our sense of smell is less perfect than theirs. See Sect. XVI. 5. Class IV. 2. 1. 16.

M. M. Mild errhines.

8. *Gustus imminutus*. Want of taste is very common in fevers, owing frequently to the dryness or scurf of the tongue, or external organ of that sense, rather than to any injury of the nerves of taste. See Class I. 1. 3. 1. IV. 2. 1. 16.

M. M. Warm subacid liquids taken frequently.

9. *Tactus imminutus*. Numbness is frequently complained of in fevers, and in epilepsy, and the touch is sometimes impaired by the dryness of the cuticle of the fingers. See Class IV. 2. 1. 16.

When the sense of touch is impaired by the compression of the nerve, as in sitting long with one thigh crossed over the other, the limb appears larger, when we touch it with our hands, which is to be ascribed to the indistinctness of the sensation of touch, and may be explained in the same manner as the apparent largeness of objects seen through a mist. In this last case the minute parts of an object, as suppose of a distant boy, are seen less distinctly, and therefore we instantly conceive them to be further from the eye, and in consequence that the whole subtends a larger angle, and thus we believe the boy to be a man. So when any one's fingers are pressed on a benumbed

limb, the sensation produced is less than it should be, judging from visible circumstances; we therefore conceive, that something intervened between the object and the sense, for it is felt as if a blanket was put between them; and that not being visibly the case, we judge that the limb is swelled.

The sense of touch is also liable to be deceived from the acquired habits of one part of it acting in the vicinity of another part of it. Thus if the middle finger be crossed over either of the fingers next to it, and a nut be felt by the two ends of the fingers so crossed at the same time, the nut appears as if it was two nuts. And lastly, the sense of touch is liable to be deceived by preconceived ideas; which we believe to be excited by external objects, even when we are awake. It has happened to me more than once, and I suppose to most others, to have put my hands into an empty basin, standing in an obscure corner of a room, to wash them, which I believed to contain cold water, and have instantly perceived a sensation of warmth, contrary to that which I expected to have felt.

In some paralytic affections, and in cold fits of ague, the sensation of touch has been much impaired, and yet that of heat has remained. See Sect XIV. 6.

M. M. Friction alone, or with camphorated oil, warm bath. Ether. Volatile alkali and water. Internally, spice, salt. Incitantia. Secernentia.

10. *Stupor*. The stupor, which occurs in fevers with debility, is generally esteemed a favourable symptom; which may arise from the less expenditure of sensorial power already existing in the brain and nerves, as mentioned in species 6 of this genus. But if we suppose, that there is a continued production of sensorial power, or an accumulation of it in the torpid parts of the system, which is not improbable, because such a production of it continues during sleep, to which stupor is much allied, there is still further reason for believing it to be a favourable symptom in inirritable fevers; and that much injury is often done by blisters and other powerful stimuli to remove the stupor. See Sect. XII. 7. 8. and XXXIII. 1. 4.

Dr. Blane, in his Croonian Lecture on muscular motion, for 1788, among many other ingenious observations and deductions, relates a curious experiment on salmon; and other fish, and which he repeated upon eels with similar event.

“ If a fish, immediately upon being taken out of the water, is stunned by a violent blow on the head, or by having the head crushed, the irritability and sweetness of the muscles will be preserved much longer, than if it had been allowed to die with the organs of sense entire. This is so well known to fishermen, that they put it in practice, in order to make them longer susceptible of the operation called *crimping*. A salmon is one of the fish least tenacious of life, insomuch, that it will

will lose all signs of life in less than half an hour after it is taken out of the water, if suffered to die without any farther injury; but if, immediately after being caught, it receives a violent blow on the head, the muscles will shew visible irritability for more than twelve hours afterwards."

Dr. Blane afterwards well remarks, that, "in those disorders in which the exercise of the senses is in a great measure destroyed, or suspended, as in the hydrocephalus, and apoplectic palsy, it happens, not uncommonly, that the appetite and digestion are better than in health."

ORDO III.

Retrograde Irritative Motions.

GENUS I.

Of the Alimentary Canal.

THE retrograde motions of our system originate either from defect of stimulus, or from defect of irritability. Thus sickness is often induced by hunger, which is a want of stimulus; and from ipecacuanha, in which last case it would seem, that the sickness was induced after the violence of the stimulus was abated, and the consequent torpor had succeeded. Hence spice, opium, or food, relieves sickness.

The globus hystericus, salivation, diabetes, and other inversions of motion attending hysteric paroxysms, seem to depend on the want of irritability of those parts of the body, because they are attended with cold extremities, and general debility, and are relieved by wine, opium, steel, and flesh diet; that is, by any additional stimulus.

When the longitudinal muscles are fatigued by long action, or are habitually weaker than natural, the antagonist muscles replace the limb by stretching it in a contrary direction; and as these muscles have had their actions associated in synchronous tribes, their actions cease together. But as the hollow muscles propel the fluids, which they contain;

tain, by motions associated in trains; when one ring is fatigued from its too great debility, and brought into retrograde action; the next ring, and the next, from its association in train falls into retrograde action. Which continue so long as they are excited to act, like the tremors of the hands of infirm people, so long as they endeavour to act. Now as these hollow muscles are perpetually stimulated, these retrograde actions do not cease as the tremors of the longitudinal muscles, which are generally excited only by volition. Whence the retrograde motions of hollow muscles depend on two circumstances, in which they differ from the longitudinal muscles, namely, their motions being associated in trains, and their being subject to perpetual stimulus. For further elucidation of the cause of this curious source of diseases, see Sect. XXIX. 11. 5.

The fluids disgorged by the retrograde motions of the various vascular muscles may be distinguished, 1. From those, which are produced by secretion, by their not being attended by increase of heat, which always accompanies increased secretion. 2. They may be distinguished from those fluids, which are the consequence of deficient absorption, by their not possessing the saline acrimony, which those fluids possess; which inflames the skin or other membranes on which they fall; and which have a saline taste to the tongue. 3. They may be distinguished from those fluids,

which are the consequence both of increased secretion and absorption, as these are attended with increase of warmth, and are inspissated by the abstraction of their aqueous parts. 4. Where chyle, or milk, is found in the feces or urine, or when other fluids, as matter, are translated from one part of the system to another, they have been the product of retrograde action of lymphatic or other canals. As explained in Sect. XXIX. 8.

SPECIES.

1. *Ruminatio*. In the rumination of horned cattle the retrograde motions of the œsophagus are visible to the eye, as they bring up the softened grass from their first stomach. The vegetable aliment in the first stomach of cattle, which have filled themselves too full of young clover, is liable to run into fermentation, and distend the stomach, so as to preclude its exit, and frequently to destroy the animal. To discharge this air the farmers frequently make an opening into the stomach of the animal with success. I was informed, I believe by the late Dr. Whytt of Edinburgh, that of twenty cows in this situation two had died, and that he directed a pint of gin or whisky, mixed with an equal quantity of water, to be given to the other eighteen; all of which eructed immense quantities of air, and recovered.

There are histories of ruminating men, and who
have

have taken pleasure in the act of chewing their food a second time. Philof. Tranfact.

2. *Ructus*. Eructation. An inverted motion of the stomach excluding through its upper valve an elastic vapour, generated by the fermentation of the aliment; which proceeds so hastily, that the digestive power does not subdue it. This is sometimes acquired by habit, so that some people can eruct when they please, and as long as they please; and there is gas enough generated to supply them for this purpose; for by Dr. Hales's experiments, an apple, and many other kinds of aliment, give up above six hundred times their own bulk of an elastic gas in fermentation. When people voluntarily eject the fixable air from their stomachs, the fermentation of the aliment proceeds the faster; for stopping the vessels, which contain new wines, retards their fermentation, and opening them again accelerates it; hence where the digestion is impaired, and the stomach somewhat distended with air, it is better to restrain than to encourage eructations, except the quantity makes it necessary. When wine is confined in bottles the fermentation still proceeds slowly even for years, till all the sugar is converted into spirit; but in the process of digestion, the saccharine part is absorbed in the form of chyle by the bibulous mouths of the numerous lacteals, before it has time to run into the vinous fermentation.

3. *Apopsia*.

3. *Apepsia*. Indigestion. Water-qualm. A few mouthfuls of the aliment are rejected at a time for some hours after meals. When the aliment has had time to ferment, and become acid, it produces cardialgia, or heart-burn. This disease is perhaps generally left after a slight inflammation of the stomach, called a surfeit, occasioned by drinking cold liquors, or eating cold vegetables, when heated with exercise. This inflammation of the stomach is frequently, I believe, at its commencement removed by a critical eruption on the face, which differs in its appearance as well as in its cause from the gutta rosea of drunkards, as the skin round the base of each eruption is less inflamed. See Class II. 1. 4. 6. This disease differs from Cardialgia, Class I. 2. 4. 5. in its being not uniformly attended with pain of the cardia ventriculi, and from its retrograde motions of a part of the stomach about the upper orifice of it. In the same manner as hysteria differs from hypochondriasis; the one consisting in the weakness and indigestion of the same portions of the alimentary canal, and the other in the inverted motions of some parts of it. This apepsia or water-qualm continues many years, even to old age; Mr. G—— of Lichfield suffered under this disease from his infancy; and, as he grew old, found relief only from repeated doses of opium.

M. M. A blister, rhubarb, a grain of opium twice a day. Soap, iron-powder. Tin-powder.

4. *Vomitus*.

4. *Vomitus*. An inverted order of the motions of the stomach and œsophagus with their absorbent vessels, by which their contents are evacuated. In the act of vomiting less sensorial power is employed than in the usual peristaltic motion of the stomach, as explained in Sect. XXXV. 1. 3. Whence after the operation of an emetic the digestion becomes stronger by an accumulation of sensorial power during its decreased action. This decreased action of the stomach may be either induced by want of stimulus, as in the sickness which attends hunger; or it may be induced by temporary want of irritability, as in cold fits of fever; or from habitual want of irritability, as the vomiting of enfeebled drunkards. Or lastly, by having been previously too violently stimulated by an emetic drug, as by ipecacuanha.

M. M. A blister. An emetic. Opium. Warmth of a bed, covering the face for a while with the bed-clothes. Crude mercury. A poultice with opium or theriaca externally.

5. *Cholera*. When not only the stomach, as in the last article, but also the duodenum, and ileum, as low as the valve of the colon, have their motions inverted; and great quantities of bile are thus poured into the stomach; while at the same time some branches of the lacteals become retrograde, and discharge their contents into the upper part of the alimentary canal; and other branches of them discharge

gorge their contents into the lower parts of it beneath the valve of the colon; a vomiting and purging commence together, which is called cholera, as it is supposed to have its origin from increased secretion of bile; but I suppose more frequently arises from putrid food, or poisonous drugs, as in the case narrated in Sect. XXV. 13. where other circumstances of this disease are explained. See Class II. 1. 2. 11.

The cramps of the legs, which are liable to attend cholera, are explained in Class III. 1. 1. 15.

6. *Ileus*. Consists in the inverted motions of the whole intestinal canal, from the mouth to the anus; and of the lacteals and absorbents which arise from it. In this pitiable disease, through the valve of the colon, through the pylorus, the cardia, and the pharynx, are ejected, first, the contents of the stomach and intestines, with the excrement and even clysters themselves; then the fluid from the lacteals, which is now poured into the intestines by their retrograde motions, is thrown up by the mouth; and, lastly, every fluid, which is absorbed by the other lymphatic branches, from the cellular membrane, the skin, the bladder, and all other cavities of the body; and which is then poured into the stomach or intestines by the retrograde motions of the lacteals; all which supply that amazing quantity of fluid, which is in this disease continually
ejected

ejected by vomiting. See Sect. XXV. 15. for a further explanation of this disease.

M. M. Copious venesection. Twenty grains of calomel in small pills, or one grain of aloe every hour till stools are procured. Blisters. Warm bath. Crude mercury. Clyster of ice-water. Smear the skin all over with grease, as mentioned in Sect. XXV. 15.

As this malady is occasioned sometimes by an intromission of a part of the intestine into another part of it, especially in children, could holding them up by their heels for a second or two of time be of service after venesection? Or the exhibition of crude quicksilver two ounces every half hour, till a pound is taken, be particularly serviceable in this circumstance? Or could half a pound, or a pound, of crude mercury be injected as a clyster, the patient being elevated by the knees and thighs so as to have his head and shoulders much lower than his bottom, or even for a short time held up by the heels? Could this also be of advantage in strangulated hernia?

Where there exists an intromission of the intestine, or in obstinate costiveness, perhaps a forcing pump, such as gardeners employ to water their trees, might be used with advantage, by driving warm water forcibly up the rectum, as is mentioned by Mr. Adair; and was used by Dettaen in experiments on dogs, who found the valve of the colon did not prevent warm-water being pushed along
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the whole course of the alimentary canal by a forcing syringe. This is well worthy trial, as well as the quicksilver introduced by the anus in inflammations, of the intestines, where no passage downwards can be procured.

Where an intussusception of the intestine exists, as is believed frequently to occur in those inflammations of the bowels of children, which are not owing to some indigestible material, as to plum stones or cherry stones, it is probable that a quantity of air alone, or of the smoke of tobacco, might be injected so forcibly as to dilate, and in consequence to pass the valve of the colon; and might push into its place the strangulated duplicature of the intestine. Air might be thus injected from a large blown bladder by means of a clyster-pipe covered with soft leather moistened with oil or mucilage, or by means of bellows, or the common apparatus for injecting the smoke of tobacco, or by a syringe used for condensing air in philosophical experiments. I have seen school-boys blow air through a grass-stem into the bowels of frogs, so as to prevent their diving, without injuring them.

Where the disease is owing to strangulated hernia, the part should be sprinkled with cold water, or iced water, or salt and water recently mixed, or moistened with ether. In cases of strangulated hernia, could acupuncture, or puncture with a capillary trocar, be used with safety and advantage to give exit to air contained in the strangulated bowel?

Or

Or to stimulate it into action? It is not uncommon for bashful men to conceal their being afflicted with a small hernia, which is the cause of their death; this circumstance should therefore always be inquired into. Is the seat or cause of the ileus always below the valve of the colon, and that of the cholera above it? See Class II. 1. 2. 11.

7. *Globus hystericus*. Hysteric suffocation is the perception of a globe rolling round in the abdomen, and ascending to the stomach and throat, and there inducing strangulation. It consists of an ineffectual inversion of the motions of the œsophagus, and other parts of the alimentary canal; nothing being rejected from the stomach.

M. M. Tincture of castor, tinct. of opium, of each 15 drops. See Hysteria, Class I. 3. 1. 9.

8. *Vomendi conamen inane*. An ineffectual effort to vomit. It frequently occurs, when the stomach is empty, and in some cases continues many hours; but as the lymphatics of the stomach are not inverted at the same time, there is no supply of materials to be ejected; it is sometimes a symptom of hysteria, but more frequently attends irregular epilepsies or reveries; which however may be distinguished by their violence of exertion, for the exertions of hysteric motions are feeble, as they are caused by debility; but those of epilepsies, as they are used to relieve pain, are of the most violent kind;

kind; infomuch that those who have once seen these ineffectual efforts to vomit in some epilepsies, can never again mistake them for symptoms of hysteria. See a case in Sect. XIX. 2.

M. M. Blister. Opium. Crude mercury.

9. *Borborismus*. A gurgling of the bowels proceeds from a partial inversion of the peristaltic motions of them, by which the gas is brought into a superior part of the bowel, and bubbles through the descending fluid, like air rushing into a bottle as the water is poured out of it. This is sometimes a distressing symptom of the debility of the bowels joined with a partial inversion of their motions. I attended a young lady about sixteen, who was in other respects feeble, whose bowels almost incessantly made a gurgling noise so loud as to be heard at a considerable distance, and to attract the notice of all who were near her. As this noise never ceased a minute together for many hours in a day, it could not be produced by the uniform descent of water, and ascent of air through it, but there must have been alternately a retrograde movement of a part of the bowel, which must again have pushed up the water above the air; or which might raise a part of the bowel, in which the fluid was lodged, alternately above and below another portion of it; which might readily happen in some of the curvatures of the smaller intestines, the air in which might

might be moved backward and forward like the air-bubble in a glass-level.

M. M. Essential oil. Ten corns of black pepper swallowed whole after dinner, that its effect might be slower and more permanent; a small pipe occasionally introduced into the rectum to facilitate the escape of the air. Crude mercury. See Class I. 2. 4. 9.

10. *Hysteria*. The three last articles, together with the lymphatic diabetes, are the most common symptoms of the hysteric disease; to which sometimes is added the lymphatic salivation, and fits of syncope, or convulsion, with palpitation of the heart (which probably consists of retrograde motions of it), and a great fear of dying. Which last circumstance distinguishes these convulsions from the epileptic ones with greater certainty than any other single symptom. The pale copious urine, cold skin, palpitation, and trembling, are the symptoms excited by great fear. Hence in hysteric diseases, when these symptoms occur, the fear, which has been usually associated with them, recurs at the same time, as in hypochondriasis, Class I. 2. 4. 10. See Sect. XVI. 8. 1.

The convulsions which sometimes attend the hysteric disease, are exertions to relieve pain, either of some torpid, or of some retrograde organ; and in this respect they resemble epileptic convulsions, except that they are seldom so violent as entirely

to produce insensibility to external stimuli; for these weaker pains cease before the total exhaustion of sensorial power is produced, and the patient sinks into imperfect syncope; whereas the true epilepsy generally terminates in temporary apoplexy, with perfect insensibility to external objects. These convulsions are less to be dreaded than the epileptic ones, as they do not originate from so permanent a cause.

The great discharge of pale urine in this disease is owing to the inverted motions of the lymphatics, which arise about the neck of the bladder, as described in Sect. XXIX. 4. 5. And the lymphatic salivation arises from the inverted motions of the salivary lymphatics.

Hysteria is distinguished from hypochondriasis, as in the latter there are no retrograde motions of the alimentary canal, but simply a debility or irritability of it, with distention and flatulency. It is distinguished from apepsia and cardialgia by there being nothing ejected from the stomach by the retrograde motions of it, or of the œsophagus.

M. M. Opium. Camphor. Assafoetida. Castor, with sinapisms externally; to which must be added a clyster of cold water, or iced water; which, according to Mons. Pommé, relieves these hysteric symptoms instantaneously like a charm; which it may effect by checking the inverted motions of the intestinal canal by the torpor occasioned by cold; or one end of the intestinal canal may become

come strengthened, and regain its peristaltic motion by reverse sympathy, when the other end is rendered torpid by ice-water. (Pomme des Affections Vaporeuses, p. 25.) These remove the present symptoms; and bark, steel, exercise, coldish bath, prevent their returns. See Art. VI. 2. 1.

11. *Hydrophobia*. Dread of water occasioned by the bite of a mad-dog, is a violent inversion of the motions of the œsophagus on the contact or even approach of water or other fluids. The pharynx seems to have acquired the sensibility of the larynx in this disease, and is as impatient to reject any fluid which gets into it. Is not the cardia ventriculi the seat of this disease? As in cardialgia the pain is often felt in the pharynx, when the acid material stimulates the other end of the canal, which terminates in the stomach. As this fatal disease resembles tetanus, or locked jaw, in its tendency to convulsion from a distant wound, and affects some other parts by association, it is treated of in Class III. 1. 1. 15. and IV. 2. 1. 7.

M. M. I should recommend the trial of one grain and a half of corrosive sublimate of mercury, hydrargyrus muriatus, dissolved in half an ounce of rectified spirit of wine, to be given undiluted, if possible, as described in Class II. 1. 5. 1. and to be repeated according to its operation.

ORDO III.

Retrograde Irritative Motions.

GENUS II.

Of the Absorbent System.

SPECIES.

1. *Catarrhus lymphaticus.* Lymphatic catarrh. A periodical defluxion of a thin fluid from the nostrils, for a few hours, occasioned by the retrograde motions of their lymphatics; which may probably be supplied with fluid by the increased absorption of some other lymphatic branches in their vicinity. It is distinguished from that mucous discharge, which happens in frosty weather from decreased absorption, because it is less salt to the taste; and from an increased secretion of mucus, because it is neither so viscid, nor is attended with heat of the part. This complaint is liable to recur at diurnal periods, like an intermittent fever, for weeks and months together, with great sneezing and very copious discharge for an hour or two.

I have seen two of these cases, both of which occurred in delicate women, and seemed an appendage to other hysterical symptoms; whence I concluded, that the discharge was occasioned by the inverted motions of the lymphatics of the nostrils, like

like the pale urine in hysteric cafes; and that they might receive this fluid from some other branches of lymphatic vessels opening into the frontal or maxillary cavities in their vicinity.

Could such a discharge be produced by strong errhines, and excite an absorption of the congection of lymph in the dropfy of the brain?

2. *Salivatio lymphatica.* Lymphatic salivation. A copious expuition of a pellucid insipid fluid, occasioned by the retrograde motions of the lymphatics of the mouth. It is sometimes periodical, and often attends the hysteric disease, and nervous fevers; but is not accompanied with a saline taste, or with heat of the mouth, or nausea.

3. *Nausea humida.* Moist nausea consists in a discharge of fluid, owing to the retrograde motions of the lymphatics about the fauces, without increase of heat, or saline taste, together with some retrograde motions of the fauces or pharynx; along with this nausea a sickness generally precedes the act of vomiting; which may consist of a similar discharge of mucus or chyle into the stomach by the retrograde motions of the lymphatics or lacteals, which open into it. See Class I. 2. 4. 3. and I. 2. 4. 4.

M. M. Subacid liquids. Wine. Opium. A blister.

4. *Diarrhœa lymphatica*. Lymphatic diarrhœa. A quantity of mucus and lymph are poured into the intestines by the inverted motions of the intestinal lymphatics. The feces are less fetid and more liquid; and it sometimes portends the commencement of a diabetes, or dropsy, or their temporary relief. This lymphatic diarrhœa sometimes becomes chronical, in which the atmospheric moisture, absorbed by the cutaneous and pulmonary lymphatics, is poured into the intestines by the retrograde motions of the lacteals. See Section XXIX. 4. 6. where some cases of this kind are related.

5. *Diarrhœa chylifera, coeliaca*. Chyliferous diarrhœa. The chyle drunk up by the lacteals of the upper intestines is poured into the lower ones by the retrograde motions of their lacteals, and appears in the dejections. This circumstance occurs at the beginning of diarrhœa crapulosa, where the patient has taken and digested more aliment than the system can conveniently receive, and thus eliminates a part of it; as appears when there is curdled chyle in some of the dejections. See Sect. XXIX. 4. 7. It differs from the lymphatic diarrhœa, as the chyliferous diabetes differs from the aqueous and mucaginous diabetes.

6. *Diabetes*. By the retrograde motions of the urinary lymphatics, an immense quantity of fluid
is

is poured into the bladder. It is either termed chyliferous, or aqueous, or mucaginous, from the nature of the fluid brought into the bladder; and is either a temporary disease, as in hysteric women, in the beginning of intoxication, in worm cases, or in those exposed to cold damp air, or to great fear, or anxiety, or in the commencement of some dropsies; or it becomes chronical.

When the urinary lymphatics invert their motions, and pour their reflux contents into the bladder, some other branch of the absorbent system acts with greater energy to supply this fluid. If it is the intestinal branch, the chyliferous diabetes is produced: if it is the cutaneous or pulmonary branch, the aqueous diabetes is produced: and if the cellular or cystic branches, the mucaginous diabetes. In the two last the urine is pellucid, and contains no sugar.

In dropsies the fluid is sometimes absorbed, and poured into the bladder by the retrograde motions of the urinary lymphatics, as during the exhibition of digitalis. In the beginning of the dropsies of infirm gouty patients, I have frequently observed, that they make a large quantity of water for one night, which relieves them for several days. In these cases the patient previously feels a fulness about the præcordia, with difficult respiration, and symptoms similar to those of hysteria. Perhaps a previous defect of absorption takes place in some part of the body in those hysteric cases, which are

relieved by a copious discharge of pale urine. See Diabetes explained at large, Section XXIX. 4.

A discharge of blood sometimes attends the diabetes, which was occasionally a symptom of that disease in Mr. Brindley, the great navigable canal maker in this country. Which may be accounted for by the communication of a lymphatic branch with the gastric branch of the vena portarum, as discovered by J. F. Meckel. See Section XXVII. 2.

M. M. Alum. Earth of alum. Cantharides. Calomel. Bark. Steel. Refin. Opium. See Sect. XXIX. 4.

Since the publication of the first edition of this work, I have seen two patients affected with diabetes, who were both of them between sixty and seventy years old, and had formerly lived rather freely, though very temperately latterly for many years. The water they made had not been accurately measured or evaporated; but one of them observed, that his terrier bitch lapped his urine in large quantities, and preferred it much to common water; whence he concluded, it must contain some nutritious matter.

They both complained of thirst, and had drunk two or three times as much as usual, during the time they had been affected with the diabetes; which was about four months in one, and about three in the other. As I esteemed these cases to be owing to the patients swallowing more fluid than
could

could be so hastily taken into the circulation, and that therefore a part of it was conveyed to the bladder by the retrograde action of the lymphatics, as in the beginning of intoxication; I prevailed on them to drink no more than their usual quantity, or less; and both these mild cases of diabetes ceased immediately by this simple treatment of them.

A similar event seems to have existed in the two cases of diabetes first published by Dr. Rollo; on those days the patients drank but little, the quantity of urine was not more than natural. Both from these cases, and from others related by Dr. Rollo, it appears, that when the patient lived on animal food, less saccharine matter was detected in the urine, and also that the quantity of the urine abated; the former of these circumstances is readily accounted for, as vegetable materials are probably more copiously convertible into sugar, either chemically or by the power of digestion, than animal materials; and the latter seems probably owing to the patients drinking less in quantity, when they were restrained from beer and milk, and were allowed only broth in their stead.

In the case from Liverpool, published by Dr. Rollo, the patient did not weigh heavier after sitting ten minutes in a bath of 110 degrees of heat; which shews that no part of the diabetic urine was owing to increased cutaneous absorption, and that this disease was not the aqueous but the chyliferous diabetes;

diabetes; and I suppose the patient's weighing heavier or not after using a warm bath may depend on the quantity of fluid previously taken by the mouth; as the skin may thence be either in an absorbent or exhalent state, and owing to a greater or less degree of heat, which may render the quantity of perspiration in the bath greater than the quantity absorbed. See Sect. XXIX. 4. 5.

7. *Sudor lymphaticus*. Profuse sweats from the inverted motions of the cutaneous lymphatics, as in some fainting fits, and at the approach of death; and as perhaps in the *sudor anglicanus*. See Sect. XXIX. 5. These sweats are glutinous to the touch, and without increased heat of the skin; if the part is not covered, the skin becomes cold from the evaporation of the fluid. These sweats without heat sometimes occur in the act of vomiting, as in Sect. XXV. 9. and are probably the cause of the cold sweaty hands of some people. As mentioned in Sect. XXIX. 4. 9. in the case of R. Davis, which he cured by frequent application of lime. Though it is possible, that cold sweaty hands may also arise from the want of due absorption of the perspirable matter effused on them, and that the coldness may be owing to the greater evaporation in consequence.

The acid sweats described by Dr. Dobson, which he observed in a diabetic patient, and ascribes to the chyle effused on the skin, must be ascribed to
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the retrograde action of the cutaneous lymphatics.
See Sect. XXIX. 6.

8. *Sudor asthmaticus*. The cold sweats in this disease only cover the head, arms, and breast, and are frequently exceedingly profuse. These sweats are owing to the inverted motions of the cutaneous lymphatics of the upper part of the body, and at the same time the increased absorption of the pulmonary absorbents: hence these sweats when profuse relieve the present fit of asthma. There is no other way to account for sweats appearing on the upper parts of the body only, but by the fluid having been absorbed by the lymphatic branch of the lungs, and effused on the skin by the retrograde movements of the cutaneous lymphatics; which join those of the lungs before they enter into the venous circulation. For if they were occasioned, as generally supposed, by the difficulty of the circulation of the blood through the lungs, the whole skin must be equally affected, both of the upper and lower parts of the body; for whatever could obstruct the circulation in the upper part of the venous system, must equally obstruct it in the lower part of it. See Sect. XXIX. 6. In the convulsive asthma these sweats do not occur; hence they may be distinguished; and might be called the hydropic asthma, and the epileptic asthma.

9. *Translatio puris.* Translation of matter from one part of the system to another can only be explained from its being absorbed by one branch of the lymphatic system, and deposited in a distant part by the retrograde motions of another branch; as mentioned Sect. XXIX. 7. 1. It is curious, that these translations of matter are attended generally, I believe, with cold fits; for less heat is produced during the retrograde action of this part of the system, as no secretion in the lymphatic glands of the affected branches can exist at the same time. Do any ineffectual retrograde motions occasion the cold fits of agues? The time when the gout of the liver ceases, and the gout in the foot commences, is attended with a cold fit, as I have observed in two instances, which is difficult to explain, without supposing the new vessels, or the matter produced on the inflamed liver, to be absorbed, and either eliminated by some retrograde motion, or carried to the newly inflamed part? See Class IV. 1. 2. 15.

10. *Translatio lactis.* Translation of milk to the bowels in puerperal fevers can only be explained by the milk being absorbed by the pectoral branch of lymphatics, and carried to the bowels by the retrograde motions of the intestinal lymphatics or lacteals. See many instances of this in Sect. XXIX. 7. 4.

11. *Translatio*

II. *Translatio urinæ.* Translation of urine. There is a curious case related in the Transactions of the College of Physicians at Philadelphia, Vol. I. p. 96. of a girl, who labouring under an ischuria vomited her urine for many months; which could not be distinguished from that which was at other times drawn off by the catheter. After having taken much opium, she seems at length to have formed gravel, some of which was frequently brought up by vomiting. Dr. Senter ascribes this to the retrograde motions of the lymphatics of the stomach, and the increased ones of those of the bladder, and refers to those of Sect. XXIX. of this work; which section was first published in 1780; and to Macquer's Dictionary of Chemistry, Art. Urine.

The patient above described sometimes had a discharge of urine by the navel, and at other times by the rectum, and sometimes by urinous sweats.

ORDO III.

Retrograde Irritative Motions.

GENUS III.

Of the Sanguiferous System.

SPECIES.

1. *Capillarium motus retrogressus*. In microscopic experiments it is usual to see globules of blood regurgitate from the capillary vessels again and again, before they pass through them; and not only the mouths of the veins, which arise from these capillaries, are frequently seen by microscopes to regurgitate some particles of blood during the struggles of the animal; but a retrograde motion of the blood in the veins of these animals, from the very heart to the extremities of the limbs, is observable by intervals during the distresses of the dying creature. Haller, Elem. Phys. T. 1. p. 216. See Section XXIX. 3. 8.

2. *Palpitatio cordis*. May not the ineffectual and weak unequal motions of the heart in hysterical cases be ascribed to the retrograde motions of it, which continue for a short time, or terminate in syncope? See Class IV. 3. 1. 6.

3. *Anbelatio*

3. *Anhelatio spasmodica*. In some asthmas may not the difficulty of respiration arise from the inverted action of the finer branches of the bronchia, or of the pulmonary artery or vein, like those of the capillaries above described in No. 1. of this genus?

The Orders and Genera of the Second Class of Diseases.

CLASS II.

DISEASES OF SENSATION.

ORDO I.

Increased Sensation.

GENERA.

1. With increased action of the muscles.
2. With the production of new vessels by internal membranes or glands with fever.
3. With the production of new vessels by external membranes or glands with fever.
4. With the production of new vessels by internal membranes or glands without fever.
5. With the production of new vessels by external membranes or glands without fever.
6. With fever consequent to the production of new vessels or fluids.
7. With increased actions of the organs of sense.

ORDO II.

Decreased Sensation.

GENERA.

1. With decreased actions of the general system.
2. With decreased actions of particular organs.

ORDO

ORDO III.

Retrograde Sensitive Motions.

GENERA.

1. Of the arterial system.
2. Of the absorbent system.
3. Of the excretory ducts.

*The Orders, Genera, and Species, of the Second
Class of Diseases.*

CLASS II.

DISEASES OF SENSATION.

ORDO I.

Increased Sensation.

GENUS I.

With increased Action of the Muscles.

SPECIES.

- | | |
|---------------------------------------|-------------------------|
| 1. <i>Deglutitio.</i> | Deglutition. |
| 2. <i>Respiratio.</i> | Respiration. |
| 3. <i>Sternutatio.</i> | Sneezing. |
| 4. <i>Anhelitus.</i> | Panting. |
| 5. <i>Tussis ebriorum.</i> | Cough of inebriates. |
| 6. <i>Singultus.</i> | Hiccough. |
| 7. <i>Crapula ventriculi.</i> | Indigestion. |
| 8. <i>Asthma humorale.</i> | Humoral asthma. |
| 9. <i>Nictitatio sensitiva.</i> | Winking from pain. |
| 10. <i>Oscitatio et pandiculatio.</i> | Yawning and stretching. |
| 11. <i>Tenesmus.</i> | Tenesmus. |
| 12. <i>Stranguria.</i> | Strangury. |
| 13. <i>Parturitio.</i> | Parturition. |

GENUS

GENUS II.

With the Production of new Vessels by internal Membranes or Glands, with Fever.

SPECIES.

- | | |
|--------------------------------------|-----------------------------|
| 1. <i>Febris sensitiva irritata.</i> | Sensitive irritated fever. |
| 2. <i>Ophthalmia interna.</i> | Inflammation of the eye. |
| 3. <i>Pbrenitis.</i> | ————— of the brain. |
| 4. <i>Peripneumonia.</i> | ————— of the lungs. |
| ————— <i>trachealis.</i> | The croup. |
| 5. <i>Pleuritis.</i> | Inflammation of the pleura. |
| 6. <i>Diaphragmitis.</i> | ————— of the diaphragm. |
| 7. <i>Carditis.</i> | ————— of the heart. |
| 8. <i>Peritonitis.</i> | ————— of the peritoneum. |
| 9. <i>Mesenteritis.</i> | ————— of the mesentery. |
| 10. <i>Gastritis.</i> | ————— of the stomach. |
| 11. <i>Enteritis.</i> | ————— of the bowels. |
| 12. <i>Hepatitis.</i> | ————— of the liver. |
| 13. <i>Splenitis.</i> | ————— of the spleen. |
| T 2 | 14. <i>Nephritis.</i> |

- | | |
|--------------------------------|-----------------------------|
| 14. <i>Nephritis.</i> | Inflammation of the kidney. |
| 15. <i>Cystitis.</i> | _____ of the bladder. |
| 16. <i>Hysteritis.</i> | _____ of the womb. |
| 17. <i>Lumbago sensitiva.</i> | _____ of the loins. |
| 18. <i>Ischias.</i> | _____ of the pelvis. |
| 19. <i>Paronychia interna.</i> | _____ beneath the nails. |

GENUS III.

With the Production of new Vessels by external Membranes or Glands, with Fever.

SPECIES.

- | | |
|--|------------------------------|
| 1. <i>Febris sensitiva inirritata.</i> | Sensitive inirritated fever. |
| 2. <i>Erysipelas irritatum.</i> | Erysipelas, irritated. |
| _____ <i>inirritatum.</i> | _____ inirritated. |
| _____ <i>sensitivum.</i> | _____ sensitive. |
| 3. <i>Tonsillitis interna.</i> | Angina, internal. |
| _____ <i>superficialis.</i> | _____ superficial. |
| _____ <i>inirritata.</i> | _____ inirritated. |

4. *Parotitis*

- | | |
|---------------------------------|--------------------------|
| 4. <i>Parotitis suppurans.</i> | Mumps, suppurative. |
| ——— <i>mutabilis.</i> | ——— mutable. |
| ——— <i>felina.</i> | ——— of cats. |
| 5. <i>Catarrhus sensitivus.</i> | Catarrh, inflammatory. |
| 6. ——— <i>contagiosus.</i> | ——— contagious. |
| ——— <i>equinus et</i> | ——— among horses |
| <i>caninus.</i> | and dogs. |
| 7. <i>Peripneumonia super-</i> | Superficial peripneumo- |
| <i>ficialis.</i> | ny. |
| 8. <i>Pertussis.</i> | Chin-cough. |
| 9. <i>Variola discreta.</i> | Small-pox, distinct. |
| ——— <i>confluens.</i> | ——— confluent. |
| ——— <i>inoculata.</i> | ——— inoculated. |
| 10. <i>Rubeola irritata.</i> | Measles, irritated. |
| ——— <i>inirritata.</i> | ——— inirritated. |
| 11. <i>Scarlatina mitis.</i> | Scarlet fever, mild. |
| ——— <i>maligna.</i> | ——— malignant. |
| 12. <i>Miliaria sudatoria.</i> | Miliary fever, sudatory. |
| ——— <i>irritata.</i> | ——— irritated. |
| ——— <i>inirritata.</i> | ——— inirritated. |
| 13. <i>Pestis.</i> | Plague. |
| ——— <i>vaccina.</i> | ——— of horned cat- |
| | tle. |
| 14. <i>Pemphigus.</i> | Bladdery fever. |
| 15. <i>Varicella.</i> | Chicken-pox. |
| 16. <i>Urticaria.</i> | Nettle-rash. |
| 17. <i>Aphtha sensitiva.</i> | Thrush, sensitive. |
| ——— <i>irritata.</i> | ——— irritated. |
| ——— <i>inirritata.</i> | ——— inirritated. |
| 18. <i>Dysenteria.</i> | Bloody flux. |

19. *Gastritis superficialis*. Superficial inflam. of
the stomach.
20. *Enteritis superficialis*. ————— of the
bowels.

GENUS IV.

With the Production of new Vessels by internal Membranes or Glands, without Fever.

SPECIES.

1. *Ophthalmia superficialis*. Ophthalmy, superficial.
- *lymphatica*. ————— lymphatic.
- *equina*. ————— of horses.
2. *Pterigion*. Eye-wing.
3. *Tarstitis palpebrarum*. Red eyelids.
4. *Hordeolum*. Styte.
5. *Paronychia superficialis*. Whitlow.
6. *Gutta rosea hepatica*. Pimpled face, hepatic.
- *stomatica*. ————— stomatic.
- *hereditaria*. ————— hereditary.
7. *Odontitis*. Inflamed tooth.
8. *Otitis*. ————— ear.
9. *Fistula lacrymalis*. Fistula lacrymalis.
10. *Fistula in ano*. Fistula in ano.

11. *Hepatitis*.

- | | |
|---------------------------------|----------------------------|
| 11. <i>Hepatitis chronica.</i> | Chronical hepatitis. |
| 12. <i>Scrofula suppurans.</i> | Suppurating scrofula. |
| 13. <i>Scorbutus suppurans.</i> | Suppurating scurvy. |
| 14. <i>Scirrhus suppurans.</i> | Suppurating scirrhus. |
| 15. <i>Carcinoma.</i> | Cancer. |
| 16. <i>Arthrocele.</i> | Swelling of the joints. |
| 17. <i>Arthropuosis.</i> | Suppuration of the joints. |
| 18. <i>Caries ossium.</i> | Caries of the bones. |

GENUS V.

With the Production of new Vessels by external Membranes or Glands, without Fever.

SPECIES.

- | | |
|------------------------------|--------------------|
| 1. <i>Gonorrhœa venerea.</i> | Clap. |
| 2. <i>Syphilis.</i> | Venereal disease. |
| 3. <i>Lepros.</i> | Leprosy. |
| 4. <i>Elephantiasis.</i> | Elephantiasis. |
| 5. <i>Frambœsia.</i> | Framboesia. |
| 6. <i>Psores.</i> | Itch. |
| 7. <i>Psores ebriorum.</i> | Itch of drunkards. |
| 8. <i>Herpes.</i> | Herpes. |
| 9. <i>Zona ignea.</i> | Shingles. |
| 10. <i>Annulus repens.</i> | Ring-worm. |
| 11. <i>Tinea capitis.</i> | Scald-head. |
| 12. <i>Crusta lactea.</i> | Milk-crust. |
| 13. <i>Trichoma.</i> | Plica polonica. |

GENUS VI.

*With Fever consequent to the Production of new
Vessels or Fluids.*

SPECIES.

- | | |
|--|--------------------------------|
| 1. <i>Febris sensitiva.</i> | Sensitive Fever. |
| 2. — <i>a pure clauso.</i> | Fever from concealed matter. |
| 3. — <i>a vomica.</i> | — from vomica. |
| 4. — <i>ab empyemate.</i> | — from empyema. |
| 5. — <i>mesenterica.</i> | — mesenteric. |
| 6. — <i>a pure aerato.</i> | — from aerated matter. |
| 7. — <i>a phthisi.</i> | — from consumption. |
| 8. — <i>scrofulosa.</i> | — scrofulous. |
| 9. — <i>ischiadica.</i> | — from ischias. |
| 10. — <i>arthropuodica.</i> | — from joint-evil. |
| 11. — <i>a pure contagiofo.</i> | — from contagious matter. |
| 12. — <i>variolofo fe-
cundaria.</i> | — fecondary of finall-
pox. |
| 13. — <i>carcinomatofa.</i> | — cancerous. |
| 14. — <i>venerea.</i> | — venereal. |
| 15. — <i>a fanie conta-
giofo.</i> | — from contagious
fanies. |
| 16. — <i>puerpera.</i> | — puerperal. |
| 17. <i>a fphacelo.</i> | — from fphacelus. |

GENUS

GENUS VII.

With increased Action of the Organs of Sense.

SPECIES.

- | | |
|---------------------------------------|----------------------------|
| 1. <i>Delirium febrile.</i> | Delirium of fevers. |
| 2. ——— <i>maniacale.</i> | ——— - maniacal. |
| 3. ——— <i>ebrietatis.</i> | ——— of drunkenness. |
| 4. <i>Somnium.</i> | Dreams. |
| 5. <i>Hallucinatio visûs.</i> | Deception of sight. |
| 6. ——— <i>auditûs.</i> | ——— of hearing. |
| 7. <i>Rubor a calore.</i> | Blush from heat. |
| 8. ——— <i>jucunditalis.</i> | —— from joy. |
| 9. <i>Priapismus amato-
rius.</i> | Amorous priapism. |
| 10. <i>Distentio mamularum.</i> | Distention of the nipples. |

ORDO II.

Decreased Sensation.

GENUS I.

With decreased Action of the general System.

SPECIES.

- | | |
|-----------------------------------|---------------------------|
| 1. <i>Stultitia insensibilis.</i> | Folly from insensibility. |
| 2. <i>Tædium vitæ.</i> | Irkomeness of life. |
| 3. <i>Paresis sensitiva.</i> | Sensitive debility. |

GENUS

GENUS II.

With decreased Actions of particular Organs.

SPECIES.

- | | |
|----------------------------------|-------------------------------|
| 1. <i>Anorexia.</i> | Want of appetite. |
| 2. <i>Adipsia.</i> | Want of thirst. |
| 3. <i>Impotentia.</i> | Impotence. |
| 4. <i>Sterilitas.</i> | Barrenness. |
| 5. <i>Insensibilitas artuum.</i> | Insensibility of the limbs. |
| 6. <i>Dysuria insensitiva.</i> | Insensibility of the bladder. |
| 7. <i>Accumulatio alvina.</i> | Accumulation of feces. |

ORDO III.

Retrograde Sensitive Motions.

GENUS I.

Of Excretory Duets.

SPECIES.

- | | |
|---------------------------------|-------------------------|
| <i>Motus retrogressus.</i> | Retrograde motion. |
| 1. ——— <i>ureterum.</i> | ————— of the ureters. |
| 2. ——— <i>urethræ.</i> | ————— of the urethra. |
| 3. ——— <i>ductûs choledoci.</i> | ————— of the bile-duct. |

CLASS

CLASS II.

DISEASES OF SENSATION.

ORDO I.

Increased Sensation.

GENUS I.

With increased Action of the Muscles.

THE actions belonging to this genus are those which are immediately excited by the sensations of pain or pleasure, but which are neither followed by inflammation, nor by convulsion. The former of which belong to the subsequent genera of this order, and the latter to the class of voluntary motions.

The criterion between the actions, which are the immediate consequence of painful sensation, and convulsive actions properly so called, consists in the former having a tendency to dislodge the stimulating cause, which induces the painful sensation; and the latter being exerted for the purpose of expending the sensorial power, and thus dulling or destroying the general sensation of the system. See Class III. 1.

There is a degree of heat produced in the affected part by these sensitive actions without inflammation,

inflammation, but in much less quantity than when attended by inflammation ; as in the latter there is production of new vessels. See Sect. XXXIII. 2. 3.

Some of the species of this genus cannot properly be termed diseases in their natural state, but become so by their defect or excess, and are here inserted to facilitate the explanation of the others.

SPECIES.

1. *Deglutitio*. Swallowing our food is immediately caused by the pleasurable sensation occasioned by its stimulus on the palate or fauces, and is acquired long before the nativity of the animal. Afterwards the pain of hunger previously produces the various voluntary exertions to procure the proper material, but the actions of masticating and of swallowing it are effected by the sensorial power of sensation ; which appears by their not being always controllable by the will, as when children in vain attempt to swallow nauseous drugs. See Class IV.

1. 3. 1. The masticated food stimulates the palate, which is an organ of sense, into so much action, as to produce agreeable sensation ; and the muscles subservient to deglutition are brought into action by the sensation thus produced. The pleasurable sensation is the proximate cause ; the action of the fibres of the extremities of the nerves of taste is the remote cause ; the sensorial power of irritation exciting these fibres of the nerves of taste into increased

creased action is the pre-remote cause ; the action of the muscles of deglutition is the proximate effect ; the pushing the food into the stomach is the remote effect ; and the nutrition of the body is the post-remote effect.

Though the muscles subservient to deglutition have their actions previously associated, so as to be excited into synchronous tribes or successive trains, either by volition, as when we swallow a disagreeable drug ; or by sensation, as when we swallow agreeable food ; or by irritation, as when we inattentively swallow our saliva ; yet do all those three kinds of deglutition belong to the respective classes of volition, sensation, and irritation ; because the first links of these tribes or trains of muscular action are excited by those sensorial powers, and the associated links, which accompany or succeed them, are excited by the combined powers either of volition, or of sensation, or of irritation, along with that of association.

2. *Respiratio.* Respiration is immediately caused by the sensorial power of sensation in consequence of the baneful want of vital air ; and not from the accumulation of blood in the lungs, as that might be carried on by inhaling azote alone, without the oxygenous part of the atmosphere. The action of respiration is thus similar to that of swallowing our food to appease the pain of hunger ; but the lungs being surrounded with air, their proper

per pabulum, no intermediate voluntary exertions are required, as in hunger, to obtain and prepare the wanted material.

Respiration is similar to slow combustion; the oxygenous part of the atmosphere is received through the moist membranes, which line the air-cells of the lungs, and uniting with the inflammable part of the blood generates an acid, probably the phosphoric acid; a portion of carbonic acid is likewise produced in this process; as appears by repeatedly breathing over lime water, which then becomes turbid. See Botanic Garden, P. I. Canto I. l. 401. note.

3. *Sternutatio*. Sneezing consists of muscular actions produced by the sensorial faculty of sensation; and is an effort to dislodge, by means of air forcibly impelled through the nostrils, some material; which stimulates the membrane, which lines them, into too great action, and might thence injure the sense of smell which is diffused on it.

In this operation the too great action of the vessels of the membrane of the nostrils is the remote cause; the sensation thence induced is the proximate cause; and the muscular actions are the proximate effect.

This action of sneezing frequently precedes common respiration in new-born children, but I believe not always; as like the latter it cannot have been previously acquired in the uterus.

It

It is produced in some people by sudden light, as by looking up at the sky in a morning, when they come out of a gloomy bed-chamber. It then becomes an associate action, and belongs to Class IV. I. 2. 2.

M. M. When it is exerted to excess it may be cured by snuffing starch up the nostrils. See Class I. I. 2. 13.

4. *Anbelitus*. Panting. The quick and laborious breathing of running people, who are not accustomed to violent exercise, is occasioned by the too great conflux of blood to the lungs. As the sanguiferous system, as well as the absorbent system, is furnished in many parts of its course with valves, which in general prevent the retrograde movement of their contained fluids; and as all these vessels, in some part of their course, lie in contact with the muscles, which are brought into action in running, it follows that the blood must be accelerated by the intermitted swelling of the bellies of the muscles moving over them.

The difficulty of breathing, with which very fat people are immediately affected on exercise, is owing to the pressure of the accumulated fat on the veins, arteries, and lymphatics; and which, by distending the skin, occasions it to act as a tight bandage on the whole surface of the body. Hence when the muscles are excited into quicker action, the progress of the blood in the veins, and of the

lymph and chyle in the absorbent system, is urged on with much greater force, as under an artificial bandage on a limb, explained in Art. IV. 2. 10. and in Sect. XXXIII. 3. 2. Hence the circulation is instantly quickened to a great degree, and the difficulty of breathing is the consequence of a more rapid circulation through the lungs. The increased secretion of the perspirable matter is another consequence of this rapid circulation; fat people, when at rest, are believed to perspire less than others, which may be gathered from their generally having more liquid stools, more and paler urine, and to their frequently taking less food than many thin people; and lastly, from the perspiration of fat people being generally more inodorous than that of lean ones; but when corpulent people are put in motion, the sweat stands in drops on their skins, and they “lard the ground” as they run. The increase of heat of corpulent people on exercise, is another consequence of their more rapid circulation, and greater secretion. See Class I. 2. 3. 17.

Other causes of difficult or quick respiration will be treated of under Asthma, Pertussis, Peripneumonia, Tonsillitis.

5. *Tussis ebriorum*. Sensitive cough is an exertion of the muscles used in expiration excited into more violent action by the sensorial power of sensation, in consequence of something which too powerfully

powerfully stimulates the lungs. As the saline part of the secreted mucus, when the absorption of it is impeded; or the too great viscosity of it, when the absorption is increased; or the too great quantity of the mucus, when the secretion is increased; or the inflammation of the membranes of the lungs; it is an effort to dislodge any of these extraneous materials.

Of this kind is the cough which attends free-drinkers after a debauch; it consists of many short efforts to cough, with a frequent expuition of half a tea-spoonful of frothy mucus, and is attended with considerable thirst. The thirst is occasioned by the previous dissipation of the aqueous parts of the blood by sensible or insensible perspiration; which was produced by the increased action of the cutaneous and pulmonary capillaries during the stimulus of the wine. In consequence of this an increased absorption commences to replace this moisture, and the skin and mouth become dry, and the pulmonary mucus becomes inspissated; which stimulates the bronchia, and is raised into froth by the successive currents of air in evacuating it. This production of froth is called by some free-drinkers "spitting sixpences" after a debauch. This subsequent thirst; dry mouth, and viscid expectoration in some people succeeds the slightest degree of intoxication, of which it may be esteemed a criterion. See Class IV. 2. I. 8.

As coughs are not always attended with pain, the muscular actions, which produce them, are

sometimes excited by the sensorial faculty of irritation, as in Class I. 1. 2. 8. I. 1. 3. 4. I. 1. 4. 3. I. 2. 3. 4. Coughs are also sometimes convulsive, as in Class III. 1. 1. 10. and sometimes sympathetic, as Class IV. 2. 1. 7.

M. M. Venesection, when the cough is attended with inflammation. Mucilages. Opium. Torpentia. Blister.

6. *Singultus*. Hiccough is an exertion of the muscles used in inspiration excited into more violent action by the sensorial power of sensation, in consequence of something which too powerfully stimulates the *cardia ventriculi*, or upper orifice of the stomach. As when solid food is too hastily taken without sufficient dilution. And is an effort to dislodge that offensive material, and push it to some less sensible part of the stomach, or into the middle of the contained aliment.

At the end of fatal fevers it may arise from the acrimony of the undigested aliment, or from a part of the stomach being already dead, and by its weight or coldness affecting the surviving part with disagreeable sensation. The pain about the upper orifice of the stomach is the proximate cause, the too great or too little action of the fibres of this part of the stomach is the remote cause, the action of the muscles used in inspiration is the proximate effect, and the repercussion of the offending material is the remote effect.

Hiccough is sometimes sympathetic, occasioned by

by the pain of gravel in the kidney or ureter, as in Class IV. I. I. 7. and is sometimes a symptom of epilepsy or reverie, as in Sect. XIX. 2.

M. M. Oil of cinnamon from one drop gradually increased to ten, on sugar, or on chalk. Opium. Blister. Emetic.

7 *Crapula ventriculi*. Indigestible substances in the stomach. This frequently occurs in children, who are restrained by their ill-active friends from fruit or other sweet things; and thus the rational mind is taught to superintend the satiety of the sensation of the sense of hunger, or of the pleasure of the palate, which is contrary to nature, and a much more erroneous guide. Hence children are liable to swallow more plumbs and cherries than their stomachs can digest; and if these run hastily into fermentation, much air, or gas, is generated; and produces an inconvenient distention of the stomach, as well as a disagreeable sensation, which generally terminates in ejecting the offending matter by vomiting.

In cows which have eaten too much young clover, the saccharine and mucilaginous matter, which it contains, runs into so violent fermentation as by distention to destroy the animal. Whence it has been customary with some to perforate the first stomach, and thus let out the air. Dr. White, of Edinburgh, asserted, that he witnessed about twenty beasts in this situation, two were dead be-

fore the medicine could be administered, but to the other eighteen he directed half a pint of spirits, called gin or whisky, mixed with as much water, to be given; and they all parted with much air by eructation, and recovered. An ingenious gentleman has lately put a flexible pipe down the esophagus into the distended stomach of these animals, with certain success, as related in some late publication. A flexible tube for this purpose might be made of wire wrapped round a stick about half an inch in diameter, and afterwards covered with leather.

A boy about 8 years old swallowed a halfpenny, which was believed to pass through him at school, some weeks afterwards, but he has not recovered his health. I was informed, that an idiot had swallowed a half-crown piece, and directed crude quicksilver to be given him in repeated quantities, but never heard the event of the case.

A lady in my presence was eating a custard out of a tea-cup, and put 3 or 4 pins into her mouth, which were supposed to have been carelessly left in the cup, and swallowed one of them: now, though needles have found their way out of the body, and other sharp indigestible materials, yet pins being terminated with heads are said often to have occasioned dangerous and painful diseases, and sometimes death. What then should be done? It occurred to me, that as the head of the pin would have so much greater friction than the point,
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that if it was carried forwards by a stream of mucilaginous fluid, the head must go first; and I therefore immediately directed an emetic, and the pin was brought up without any pain, or any stains of blood in the ejected fluid.

8. *Asthma humorale*. The humoral asthma probably consists in a temporary anasarca of the lungs, which may be owing to a temporary defect of lymphatic absorption. Its cause is nevertheless at present very obscure, since a temporary deficiency of venous absorption, at the extremities of the pulmonary or bronchial veins, might occasion a similar difficulty of respiration. See Abortio, Class I. 2. 1. 14. Or it might be supposed, that the lymph effused into the cavity of the chest might, by some additional heat during sleep, acquire an aerial form, and thus compress the lungs; and on this circumstance the relief, which these patients receive from cold air, would be readily accounted for.

The paroxysms attack the patient in his first sleep, when the circulation through the lungs in weak people wants the assistance of the voluntary power. Class I. 2. 1. 3. And hence the absorbents of the lungs are less able to fulfil the whole of their duty. And part of the thin mucus, which is secreted into the air-cells, remains there unabsorbed, and occasions the difficult respiration, which awakes the patient. And the violent exertions of

the muscles of respiration, which succeed, are excited by the pain of suffocation, for the purpose of pushing forwards the blood through the compressed capillaries, and to promote the absorption of the effused lymph.

In this the humoral differs from the convulsive asthma, treated of in Class III: I. I. 10. as in that there is probably no accumulated fluid to be absorbed; and the violent respiration is only an exertion for the purpose of relieving pain, either in the lungs or in some distant part, as in other convulsions, or epilepsy; and in this respect the fits of humoral and convulsive asthma essentially differ from each other, contrary to the opinion expressed without sufficient consideration in Sect. XVIII. 15,

The patients in the paroxysms both of humoral and convulsive asthma find relief from cold air, as they generally rise out of bed, and open the window, and put out their heads; for the lungs are not sensible to cold, and the sense of suffocation is somewhat relieved by there being more oxygen contained in a given quantity of cold fresh air, than in the warm confined air of a close bed-chamber.

I have seen humoral asthma terminate in confirmed anasarca, and destroy the patient, who had been an excessive drinker of spirituous potation. And M. Savage asserts, that this disease frequently terminates in diabetes; which seems to shew, that it is a temporary dropsy relieved by a great flow of urine. Add to this, that these paroxysms of
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the asthma are themselves relieved by profuse sweats of the upper parts of the body, as explained in Class I. 3. 2. 8. which would countenance the idea of their being occasioned by congestions of lymph in the lungs.

The congestion of lymph in the lungs from the defective absorption of it is probably the remote cause of humoral asthma; but the pain of suffocation is the immediate cause of the violent exertions in the paroxysms. And whether this congestion of lymph in the air-cells of the lungs increases during our sleep, as above suggested, or not; the pain of suffocation will be more and more distressing after some hours of sleep, as the sensibility to internal stimuli increases during that time, as described in Sect. XVIII. 15. For the same reason many epileptic fits, and paroxysms of the gout, occur during sleep.

In two gouty cases, complicated with jaundice, and pain, and sickness, the patients had each of them a shivering fit, like the commencement of an ague, to the great alarm of their friends; both which commenced in the night, I suppose during their sleep; and the consequence was a cessation of the jaundice, and pain about the stomach, and sickness; and instead of that the gout appeared in their extremities. In these cases I conjecture, that there was a metastasis not only of the diseased action from the membranes of the liver to those of the foot; but that some of the new vessels, or new

fluids, which were previously produced in the inflamed liver, were translated to the feet during the cold fit, by the increased absorption of the hepatic lymphatics, and by the retrograde motions of those of the affected limbs.

This I think resembles in some respects a fit of humoral asthma, where stronger motions of the absorbent vessels of the lungs are excited, and retrograde ones of the correspondent cutaneous lymphatics; whence the violent sweats of the upper parts of the body only are produced; and for a time the patient becomes relieved by the metastasis and elimination of the offending material by sensitive exertion. For a further account of this intricate subject see Class III. 1. 1. 10.

M. M. To relieve the paroxysm a tea-spoonful of ether may be given mixed with water, with 10 drops of laudanum, to be repeated three or four times. Venesection. An emetic. A blister. Afterwards the Peruvian bark, with a grain of opium at night, and two or three of aloes. A flannel shirt in winter, but not in summer. Issues, Digitalis?

In this species of asthma, there is great reason to believe, that the respiration of an atmosphere, with an increased proportion of oxygen, will prove of great advantage; some well-observed and well-attested cases of which are published by Dr. Beddoes; as this purer air invigorates the circulation, and the whole system in consequence, perhaps not
only

only by its stimulus, but by its supplying the material from which the sensorial power is extracted or fabricated. In spasmodic asthma, on the contrary, Dr. Ferriar has found undoubted benefit from an atmosphere mixed with hydrogen. See Sect. XVIII. 15. and Class III. 1. 1. 10.

9. *Nictitatio sensitiva*. Winking of the eyes is performed every minute, without our attention, for the purpose of diffusing the tears over them, which are poured into the eye a little above the external corner of it, and which are afterwards absorbed by the lacrymal points above and below the internal corner of it. When this operation is performed without our attention, it is caused by the faculty of irritation, and belongs to Class I. 1. 4. 1. but when it is produced by a stronger stimulus of any extraneous material in the eye, so as to cause pain, the violent and frequent nictitation is caused by the faculty of sensation.

This disease is sometimes produced by the introversion of the edge of the lower eyelid, which bends the points of the hairs of the eyelash upon the ball of the eye, which perpetually stimulate it into painful sensation. This introversion of the eyelid is generally owing to a tumour of the cellular membrane below the edge of the eyelid, and though a very troublesome complaint may often be cured by the following simple means. A little common plaster spread on thin linen, about a quarter

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ter of an inch long, must be rolled up so as to be about the size of a crow-quill; this must be applied immediately below the eyelash on the outside of the eye, and must be kept on by another plaster over it. This will then act as a slight compression on the tumour under the eyelash, and will prevent the hairs from touching the eye-ball. In a week or two the compression will diminish the tumor it lies over, and cure this painful deformity.

10. *Oscitatio. et pandiculatio.* Yawning and stretching of the limbs is produced either by a long inactivity of the muscles now brought into action, as sometimes happens after sleep, or after listening a long time to a dull narrative; or it is produced by a too long continued action of the antagonist muscles. In the former case there is an accumulation of sensorial power during the quiescence of the muscles now brought into action; which probably constitutes the pain or wearisomeness of a continued attitude. In the latter case there is an exhaustion of sensorial power in the muscles, which have lately been acting violently, and a consequent accumulation in the muscles, which are antagonists to them, and which were at rest.

These involuntary motions are often seen in paralytic limbs, which are at the same time completely disobedient to the will; and are frequently observable in very young children; and from
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thence we may conclude, that these motions are learnt before nativity; as puppies are seen to open their mouths before the membranes are broken. See Sect. XVI. 2.

Where these motions are observed in limbs otherwise paralytic, it is an indication that electric shocks may be employed with advantage, as the excitability of the limb by irritation is not extinct, though it be disobedient both to volition and sensation.

II. *Tenesmus* consists in violent and frequent ineffectual efforts to discharge the contents of the rectum, owing to pain of the sphincter. The pain is produced by indurated feces, or by some acrid material, as the acidity of indigested aliment; and the efforts are attended with mucus from the pained membrane. The feces must sometimes be taken away by the end of a marrow-spoon, as cathartics and even clysters will pass without removing them. It is sometimes caused by sympathy with the urethra, when there is a stone at the neck of the bladder. See Class II. 2. 2. 7. and IV. 1. 2. 8.

M. M. Fomentation, an enema with mucilage and laudanum.

The common exclusion of the feces from the rectum is a process similar to this, except that the muscles of the sphincter ani, and those of the abdomen, which act along with them by the combined

bined powers of sensation and association, are in tenesmus excited by painful sensation, and in the latter by a sensation, which may in some instances be almost called pleasurable, as relieving us from a painful one in the exclusion of the feces.

12. *Stranguria*. Strangury consists in painful efforts to discharge the contents of the urinary bladder. It is generally owing to a stone in the sphincter of the bladder; or to the inflammation of the neck of it occasioned by cantharides. It is sometimes caused by sympathy with the piles; and then is liable in women to occasion convulsions, from the violence of the pain without inflammation. See Class IV. 2. 2. 2. and 3.

M. M. Fomentation clyster with oil and laudanum, push the stone back with a bougie; if from cantharides, give half a pint of warm water every ten minutes. Mucilage of gum arabic and tragacanth.

The natural evacuation of the urine is a process similar to this, except that the muscular fibres of the bladder, and the muscles of the abdomen, which act in concert with them by the combined powers of sensation and of association, are, in the former case of strangury, excited into action by painful sensation; and in the latter by a sensation, which may almost be termed pleasurable, as it relieves us from a previous uneasy one.

The *ejectio feminis* is another process in some respects

respects similar to strangury, as belonging to the same sensible canal of the urethra, and by exciting into action the acceleratory muscles; but in the strangury these muscles are excited into action by painful sensation, and in the ejection of the semen by pleasurable sensation.

13. *Parturitio*. Parturition is not a disease, it is a natural process, but is more frequently unfortunate in high life than amongst the middle class of females; which may be owing partly to fear, with which the priests of LUCINA are liable to inspire the ladies of fashion to induce them to lie-in in town; and partly to the bad air of London, to which they purposely resort.

There are however other causes, which render parturition more dangerous to the ladies of high life; such as their greater general debility from neglect of energetic exercise, their inexperience of the variations of cold and heat, and their seclusion from fresh air. To which must be added, that great source of the destruction of female grace and beauty, as well as of female health, the tight stays, and other bandages, with which they are generally tortured in their early years by the active folly of their friends, which by displacing many of the viscera impedes their actions, and by compressing them together produces adhesions of one part to another, and affects even the form and
aperture

aperture of the bones of the pelvis, through which the nascent child must be protruded.

As parturition is a natural, not a morbid process, no medicine should be given, where there is no appearance of disease. The absurd custom of giving a powerful opiate without indication to all women, as soon as they are delivered, is, I make no doubt, frequently attended with injurious, and sometimes with fatal consequences. See Class II.

I. 2. 16.

Another thing very injurious to the child, is the tying and cutting the navel-string too soon; which should always be left till the child has not only repeatedly breathed, but till all pulsation in the cord ceases. As otherwise the child is much weaker than it ought to be; a part of the blood being left in the placenta, which ought to have been in the child; and at the same time the placenta does not so naturally collapse, and withdraw itself from the sides of the uterus, and is not therefore removed with so much safety and certainty. The folly of giving rue or rhubarb to new-born children, and the danger of feeding them with gruel instead of milk, is spoken of in Class I. 1. 2. 5. and II. 1. 2. 16.

Many ladies become diseased by an unnatural refusal of giving suck to their child, which ought to relieve their breasts of the load of milk, and give consolation to their minds by the storge or love

love to their infant. Many ladies indeed experience a difficulty in nursing their children from their not having nipples to their breasts; which have been often inflamed and destroyed in their early years, even in their infancy, as I have seen, by the hard edge of stiff stays rubbing against them, and sometimes, I believe, by the small pox.

M. Herholdt, of Copenhagen, has announced a discovery which he thinks highly interesting to humanity; which is, that the apparent death of newborn infants arises from the trachea, or wind-pipe, being filled with water; and that they may be generally saved by giving them such an inclined position, that the water may run out. Of thirteen children, which were supposed to be dead or still-born, he says, that twelve recovered by these simple means. As the trachea may not have acquired due sensibility before delivery, in some feeble or premature births, this circumstance may possibly arise, though it seldom occurs even in drowned people. Medical Review, July, 1799.

ORDO I.

Increased Sensation.

GENUS II.

With the Production of new Vessels by internal Membranes or Glands, with Fever.

IN the first class of diseases two kinds of fevers were described, one from excess, and the other from defect of irritation; and were in consequence termed irritative, and inirritative fevers. In this second class of diseases another kind of fever occurs, which is caused by excess of sensation, and termed in consequence Sensitive Fever. But there is no fever from defect of sensation, because the circulation is carried on in health without our consciousness, that is, without any sensation attending it.

But as excess of sensation may exist with excess or defect of irritation, two other kinds of fever arise from a combination of sensitive fever with the irritative, and inirritative ones. Making five kinds in all.

1. Irritative fever, described in Class I. 1. 1. 1.
2. Inirritative fever. Class I. 2. 1. 1.
3. Sensitive fever. Class II. 1. 6. 1.
4. Sensitive irritated fever. Class II. 1. 2. 1.
5. Sensitive inirritated fever. Class II. 1. 3. 1.

As the sensitive irritated fever attends all the diseases enumerated under the genus about to be described,

described, it is placed at the head of it. And as the sensitive irritated fever accompanies the greatest number of the species enumerated under the third genus of this order, it is placed at the head of them. And as the sensitive fever attends the diseases of the sixth genus, it is placed at the head of them. But as every febrile paroxysm consists of disordered tribes or trains of associated motions, it may be doubted, whether they ought not all to have been placed in the fourth class, amongst the diseases of association. See Class IV.

2. 4. II.

All the subsequent species of this genus are attended with sensitive irritated fever; there are nevertheless some superficial inflammations, which affect the same situations without much fever, as the scrofulous ophthalmy and spurious peripneumony, which belong to other genera.

Inflammation is uniformly attended with the production or secretion of new fibres constituting new vessels; this therefore may be esteemed its essential character, or the criterion of its existence. The extension of the old vessels seems rather a consequence than a cause of the germination, or pullulation, of these new ones; for the old vessels may be enlarged, and excited with unusual energy, without any production of new ones, as in the blush of shame or of anger.

When these new vessels are formed, if they are not reabsorbed into the circulation, they secrete a

new fluid called purulent matter ; which generally opens itself a passage on the external skin, and produces an ulcer, which either gradually heals, or spreads, and is the cause of hectic fever ; or they secrete contagious matter, which has the property of exciting the same kind of inflammation, and of producing the same kind of contagious matter, when inserted by inoculation into the skin of other persons. These contagious matters form ulcers, which either heal spontaneously, or by art ; or continue to spread, and destroy the patient, by other kinds of hectic fever.

In this genus there is an increase of the sensorial power of irritation as well as of sensation ; whence great arterial energy is produced, and the pulse becomes strong and full, as well as quick ; and the coats of the arteries feel hard under the finger, being themselves thickened and distended by inflammation. The blood drawn, especially at the second bleeding, is covered with a tough size ; which is probably the mucus from the inflamed internal surface of the arteries, increased in quantity, and more coagulable than in its natural state ; the thinner part being more perfectly absorbed by the increased action of the inflamed absorbents. See Sect. XXXIII. 2. 2. This is rendered more probable, because the hard feel of the pulse, and the abundance of coagulable lymph commence, exist, and cease together.

Great heat is produced from the new chemical combinations.

combinations arising in the secretion of new fibres, and great pain from the distention of old ones, or from their increased action. The increased quantity of sensation from a topical inflammation or phlegmon is the immediate cause of the febris sensitiva irritata, or inflammatory fever; as when it arises from the pain of pleurisy, or paronychia; but generally an irritative fever precedes this topical inflammation, which occurs during the hot fit of it; and then the irritative fever is changed into a sensitive irritated fever, by the additional cause of the sensorial power of sensation besides that of irritation.

SPECIES.

1. *Febris sensitiva irritata.* Sensitive irritated fever, or inflammatory fever. Phlegmasia. A strong full pulse, with inflammation of the coats of the arteries, constitutes this disease. It originates from some topical inflammation, which, if the fever is not subdued, terminates in suppuration; and differs from irritative fever in respect to the painful sensation which accompanies it. For as pleasurable sensation is the cause of the growth of the new vessels, and distention of the old ones, in the natural enlargement of the body during our infancy; so a painful sensation is the cause of the unnatural production of new vessels, and enlargement of old ones in inflammatory diseases.

When matter is thus formed in any internal viscus, or in the cellular membrane, as in the lungs or liver; so long as this abscess remains without admission of air, this inflammatory fever is liable to continue, receiving only temporary relief by bleeding or emetics, or cathartics; till the patient, after a month, or two, or three, expires. But, if air be admitted to these internal abscesses, this kind of fever is changed into a hectic fever in a single day. It also sometimes happens, that when the abscess remains unopened to the air, if the matter has become putrid, hectic fever supervenes, with colliquative sweats, or diarrhœa; the matter in both cases is sometimes absorbed, and the sides of the abscess grow together again without an external aperture. See Class II. 1. 4. 1. and 2. Another termination of inflammation is in gangrene, but this belongs to the inflammation of the external skin; as the production of purulent matter belongs to inflammation of the internal or mucous membranes. Thus when the external skin is the seat of inflammation, as in erythema, or erysipelas, and produces sensitive irritated fever, no collection of purulent matter can be formed; but a material oozes out, and lies upon the surface, like that in the confluent small-pox, and the cuticle at length peels off, or gangrene supervenes. It must be noted, that these kinds of inflammation can exist together; and some parts of the cellular membrane may

may suppurate at the same time that the external skin is affected with erythema, or erysipelas.

M. M. Venesection. Cathartics. Diluents. Coolair. Torpentia. Cold Bath? See Sect. XII. 6.

The increased arterial action in this sensitive irritated fever is not simply owing to the increased irritability of the arterial system, or to the stimulus of the distention of the vessels, but also to the increased acrimony or pungency of the blood; which has now so far changed its nature as to become more fluid, more dense, and to be loaded with coagulable lymph. Hence it becomes necessary not only to lessen the quantity of blood by venesection and by cathartics, but also to dilute its acrimony, or pungency, by the introduction of aqueous and mucilaginous fluids, such as barley water, cream and water, sugar and water, weak broths; to which may be added so much of some vegetable essential oil, as may render them grateful to the stomach, and thus promote their absorption; as by infusing parsley or cellery and turneps in the broth; or by balm, mint, or sage teas.

The following species of this genus only distinguish the situation of the part previously inflamed, and which is the remote cause of the sensitive irritated, or inflammatory fever, which attends it.

2. *Ophthalmia interna*. Inflammation of the eye is attended with the production of new vessels, which spread over the tunica conjunctiva, and over

the cornea; these new vessels are easily seen, as they lie on a white ground, and give ocular demonstration of their production in inflammation. When this inflammation of the cornea suppurates, it is liable to leave little ulcers, which may be seen beneath the surface in the form of little excavations; and as these heal, they are liable to be covered with an opake scar. This scar, in some months or years, is liable to wear away, and become transparent, without the assistance of any polishing powder, as of very finely levigated glass, as some have recommended. But when the cornea is affected through all its thickness, the return of its transparency becomes hopeless. See Class I. 1. 3. 14.

In violent degrees of ophthalmia the internal parts, as the retina, optic artery, iris, ciliary process, become inflamed, as well as the external ones; hence the least light admitted to the eye occasions intolerable pain. This curious circumstance cannot be owing to the action of light on the inflamed vessels of the cornea; it therefore shews, that the extremity of the optic nerve or retina is also rendered more exquisitely sensible to light, by partaking of the inflammation; and I have been told, that red colours are in these cases sometimes painfully perceived even in perfect darkness. This shews that the retina is excited into motion by the stimulus of light; and that, when it is inflamed, these motions give great pain, like those of other inflamed parts, as the muscles, or membranes.

And

And secondly, that the ideas of colours consist in the motions of the retina; which ideas occasion pain, when the extremity of the moving nerve is inflamed.

M. M. Venesection. Cathartics. Diluents. Torpentia. Frequently moisten the eye with cold water by means of a rag. Cool airy room. Darkeness. When the inflammation begins to decline, white vitriol gr. vi. in an ounce of water is more efficacious to moisten the eye than solutions of lead. Tincture of opium diluted. Extract of belladonna. New vessels from the inflamed tunica adnata frequently spread like a fly's wing upon the transparent cornea, which is then called Pterigium. To stop the growth of this, the principal vessels should be cut through with a lancet. When the inflammation begins to decline, after due evacuation any stimulating material put into the eye increases the absorption, which soon removes the new red vessels; which has given rise to a hundred famous eye-waters, and eye-doctors; if these stimulating materials are used too soon, the inflammation is increased by them. See Sect. XXXII. 2. 10. Class I. 2. 2. 13.

There is another ophthalmia, which attends weak children, and is generally esteemed a symptom of scrofula, as described in Class II. 1. 5. 3. and another, which is of venereal origin, mentioned in Class II. 1. 5. 2. both which may be termed ophthalmia superficialis.

3. *Phrenitis*. Inflammation of the brain is attended with intolerance of light and sound; which shews, that the extremities of the nerves of those senses are at the same time inflamed; it is also attended with great pain of the head, with watchfulness, and furious delirium. The violent efforts, these patients are said sometimes to exert, are owing to the increased secretion of sensorial power in the brain; as all other inflamed glands have a greater circulation of blood passing through them, and a greater secretion in consequence of their peculiar fluids, as in the hepatitis much more bile is generated.

M. M. Venesection. Cathartics. Torpentina. Foment the head with cold water for hours together. Or with warm water. Cool airy room. Afterwards cupping on the occiput. Leeches to the temples. When the patient is weakened a blister on the head, and after further exhaustion five or six drops of tincture of opium.

4. *Peripneumonia*. Inflammation of the lungs. The pulse is not always hard, sometimes soft; which is probably owing to a degree of sickness or inaction of the stomach; with dull pain of the chest; respiration constantly difficult, sometimes with erect posture; the face bloated and purplish; cough generally with moist expectoration, often stained with blood.

When the difficulty of respiration is very great,
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the patient is not able to cough ; in this situation, after copious bleeding, the cough is liable to return, and is so far a favourable symptom, as it shews some abatement of the inflammation.

A peripneumony frequently occurs in the chin-cough, and destroys the patient, except immediate recourse be had to the lancet, or to four or five leeches ; when blood cannot be otherwise taken.

The peripneumony is very fatal to young children, especially as I believe it is frequently mistaken for a spasmodic asthma, or for the croup, or cynanche trachealis of Cullen. Both which, however, when they occur, require immediate venesection by the lancet or by leeches, as well as the peripneumony ; as mentioned below.

Inflammation of the lungs is also liable to occur in the measles, and in the whooping-cough, and must be attacked by venesection at any time of the disease ; otherwise either a present death, or an incurable consumption, is the consequence.

The peripneumony is frequently combined with inflammation of the pleura, and sometimes with that of the diaphragm ; either of these may generally be distinguished, not only by the pain which attends inflammation of these membranes, but by inspecting the naked chest, and observing whether the patient breathes more by elevating the ribs, or by depressing the diaphragm.

A crisis happens in children about the sixth day with much pale urine, which must be waited for
after

after evacuations have been used, as far as can be done with safety; in this situation the warm bath twice a day, and small blisters repeatedly in succession, are of peculiar service.

After the termination of peripneumony a collection of coagulable lymph is frequently left in the cavity of the chest unabSORBED; or a common anasarca of the lungs occurs from the present inaction of the absorbent vessels, which had previously been excited too violently. This difficulty of breathing is cured or relieved by the exhibition of digitalis. See Art. IV. 2. 7.

M. M. The lancet is the anchor of hope in this disease; which must be repeated four or five times, or as often as the fever and difficulty of breathing increase, which is generally in the evening; antimonials, diluents, repeated small blisters about the chest, mucilage, pediluvium, warm bath. Is a decoction of feneca-root of use? Do not neutral salts increase the tendency to cough by their stimulus, as they increase the heat of urine in gonorrhœa? Children in every kind of difficult breathing, from whatever cause, should be kept as upright in bed as may be, and continually watched; since, if they slip down, they are liable to be immediately suffocated: to prevent which a pillow should be put beneath the undermost sheet half way down in the bed, so as to receive the posteriors of the child, and thus counteract its sliding down lower; or drawers on the thighs might be occasionally

sionally used for this purpose, as mentioned in Class III. 2. 1. 10. And children should have no cap string tied under their chins, in any cough or difficulty of respiration, since if they slip down in their bed the friction of the night-cap on the pillow is liable to draw the tape or ribbon under the chin too tight, and suffocate them. After the patient is greatly debilitated, so that no further evacuation can be admitted, and the difficult breathing and cough continue, I have given four or five drops of tincture of opium, that is, about a quarter of a grain of solid opium, with great advantage, and I believe in several cases I have saved the patient. A greater quantity of opium in this state of debility cannot be used without hazarding the life of the person. This small quantity of an opiate should be given about six in the evening, or before the access of the evening paroxysm, and repeated three or four nights, or longer.

There is a peripneumony with weak pulse, which may be termed *peripneumonia inirritata*, as described in Sect. XXVII. 2. which belongs to this place. See also Superficial Peripneumony, Class II. 1. 3. 7.

Peripneumonia arthritica. Gouty peripneumony. I believe, that there exists a peripneumony, and a pleurisy which owe their inflammation to the sympathy of those membranes with some other parts of the system, and may then properly be termed rheumatic or gouty peripneumony, or pleurisy. And that the coagulable lymph left upon
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the inflamed membranes has generally been owing to these sympathetic inflammations, and that hydrops thoracis, and anasarca pulmonum are generally caused by gouty affections of the lungs, or rheumatic affections of the pleura, and not by the more common idiopathic inflammations of those membranes. See Class I. 2. 3. 14. and Class IV. 1. 2. 16. and Class IV. 1. 2. 9.

Peripneumonia trachealis. Croup. The croup is an inflammation of the upper part, and the peripneumonia of the lower part of the same organ, viz. the trachea or wind-pipe. See Class I. 1. 3. 4. But as the inflammation is seldom, I believe, confined to the upper part of the trachea only, but exists at the same time in other parts of the lungs; and as no inflammation of the tonsils is generally perceptible, the uncouth name of cynanche trachealis should be changed for peripneumonia trachealis.

Dr. Wichmann, of Hanover, believes, that the acute asthma of Millar, or hives, has been confounded with the angina polyposa, or croup, which has occasioned the great difference in the treatment recommended by authors; as the disease has been esteemed inflammatory by some, and spasmodic by others.

The convulsive asthma, which I have witnessed in one child, was readily distinguished from the croup; as there was simply a great exertion in breathing, but without the harsh sound which attends

tends the inspirations in the latter, and there was no attendant fever; and the disease was cured by one venesection, and a moderate dose of opium after the venesection. See asthma convulsivum.

Class III. 1. 1. 10.

A convulsive difficulty of respiration may thus be easily distinguished from the croup; as in the former the patient draws in the breath easily, and then voluntarily closes the larynx, and voluntarily uses great exertion in forcing out the breath, with design to relieve some pain by this violent exertion, as in paroxysms of epilepsy.

On the contrary, in the croup the breath is easily expired, but the inspirations are attended with the utmost difficulty. This difficulty of inspiration may be seen by viewing the region of the stomach; as when the child raises the sternum for the purpose of drawing in its breath, the pressure of the atmosphere on the pit of the stomach presses the diaphragm upwards, and makes a sudden and great hollow in the scrobiculus cordis. This difficulty of inspiration, and not of expiration, is also known by the harsh sound, which only attends the inspiration.

This difficulty of inspiration may in part be owing to this circumstance. In dissecting those children who have died of the croup, I believe the upper part of the adherent coagulable lymph, or indurated mucus, formed within the trachea, is found to become loose, and to separate from the
upper

upper part of the trachea before the lower part of that adhesive membranous crust begins to separate, and hence the loose upper part at the time of inspiration is bent downwards into the trachea, and thus becomes double, and obstructs the passage; but this duplicature of it does not happen in expiration. See *Transact. of a Society*, Vol. II. *Account of Croup*, by Henry Ramsay, case the 8th. Might not this be prevented from being fatal, by an aperture into the wind-pipe beneath the larynx?

I have very lately seen a most distinct case of this peripneumonia trachealis, or croup. The child, about ten months old, had great difficulty in drawing in its breath, with much noise; but had much less difficulty in its expiration, with little or generally no sound. On observing its naked chest, the sternum, or breast-bone, was seen to be raised with great force; and then the diaphragm, and the bowels under it, rose hastily up into the lower part of the cavity of the chest; and the air rushed with difficulty, and with great sound, through the contracted larynx into the upper part of the chest; both these effects were evidently owing to the pressure of the atmosphere, to supply the vacuity, which must otherwise succeed the forcibly raising of the sternum.

Why the difficulty of inspiring was so much greater than of expiring, requires to be further explained. During inspiration, the pressure of the atmosphere,

atmosphere, when the cavity of the chest is enlarged by raising the sternum, and depressing the diaphragm, acts upon the external part of the larynx, as well as on the aperture of it, and thus contracts it, and assists the disease; whereas in expiration there is no increase of atmospheric pressure on the outside of the larynx, or trachea, to prevent the exclusion of the air. In the same manner, if a flexible pipe of soft leather was extended upwards a few inches through the bottom of a bucket of water, but very little of the water could be discharged by it; as the pressure on its sides would soon compress the pipe, and thus stop up its mouth.

After repeated venesection, and a cathartic of calomel, a blister was applied on each side of the larynx, and the difficulty of breathing became greatly relieved; and though the child had intervals of easier respiration, and without noise, yet it died on the succeeding day.

Where the difficulty of breathing is very urgent in the croup, bronchotomy is recommended by Mr. Field. *Memoirs of a Medical Society, London, 1773, Vol. IV.*

After repeated venesection, and cathartics, perhaps a drop or two drops of tincture of opium, about six in the evening, might be of use to prevent the return of the evening paroxysm, and this especially if the difficulty of respiration has an interval or remission, as mentioned below.

A strong decoction of seneca root is recommended

mended by Dr. Archer, of America. He boils half an ounce of the root, from eight ounces of water to four, and gives a tea-spoonful every hour or half hour, so as to produce vomiting or purging, and then gives it in smaller quantities. He also rubs mercurial ointment about the throat, and uses calomel internally, so as to affect the glands of the throat as quickly as possible, when the disease is more advanced, and the difficulty of breathing with harsh and shrill inspiration is more urgent. Medical and Physical Journal, No. I. p. 83. As a decoction of seneca root particularly stimulates some parts of the throat, occasioning a disagreeable sensation in it, it may in some cases contribute to loosen or discharge the adhesive coagulable lymph, which has been secreted on the inflamed membrane of the wind-pipe, and occasions the difficulty of inspiration by contracting its aperture; and may therefore be worth trial after repeated venesection, and cathartics, and blisters on each side of the throat.

Dr. Wichmann of Hanover, above mentioned, asserts, that in the croup the disease continues regularly to increase, from the commencement of it, without intervals of relief from the great difficulty of breathing; and gives this as a criterion to distinguish the angina polyposa from the asthma acutum. Annals of Medicine, Vol. I. But in the cases of true croup, peripneumonia trachealis, I have seen with surprise the difficulty of respiration
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to cease for a time, and return again with unabated violence. These remissions of the difficult respiration are also mentioned by Dr. Ferriar, who then terms it a spurious croup, but which I suspect to be owing simply to the following circumstances.

In a common catarrh, when the mucous membrane of the nostrils is much inflamed, it becomes so thickened as totally to prevent respiration through them; yet on suddenly warming the skin, by drinking tea or by a fire, and sometimes by only cooling the membrane of the nostrils by going into the cold air, the swelling of this membrane will suddenly subside, so as to permit the air to pass through quite easily for a time, as explained in catarrhus calidus. Class I. 1. 2. 7. The same circumstance may occur to the inflammation of the membrane, which lines the upper part of the trachea, or it may happen from the doubling of the loosened upper part of the adhesive mucus.

M. M. Frequent bleeding by the lancet or leeches. A few grains of calomel. Seneka. Blisters about the throat. An opiate in small quantity at night after previous evacuations. Mercurial ointment. Warm bath. Breathing over the steam of warm water, with or without volatile alkali, or ether, or vinegar. Particular attention should be used to keep the child raised high in bed. Might the skin be kept agreeably warm, and at the same time might quite cold air be breathed through a tube coming from without, through a broken window,

or hole in a door? Or might the child be carried out into the cold air very warmly clad? If a solution of sublimate could be safely used, as in gonorrhœa, Class II. 1. 5. 1?

After evacuation by copious venesection, might not the frequent application of ether externally to the throat be serviceable? And where there occur intervals of easy respiration, might not breathing over the dust of powdered Peruvian bark prevent a return of the thickening of the membrane, as described in Class II. 1. 6. 7.

5. *Pleuritis*. Pleurisy. Inflammation of the pleura, with hard pulse, pain chiefly of the side, pungent, particularly increased during inspiration; lying on either side uneasy, the cough very painful, dry at the beginning, afterwards moist, often bloody.

One cause of pleurisy is probably a previous adhesion of the lungs to a part of the pleura, which envelops them. This in many cases has been produced in infancy, by suffering children to lie too long on one side. Or by placing them uniformly on one side of a fire, or window, to which they will be liable always to bend themselves.

When matter is produced during peripneumony or pleurisy in one side of the chest, so long as it is a concealed vomica, the fever continues, if the disease be great, for many weeks, and even months; and requires occasional venesection, till the patient

tient sinks under the inflammatory or sensitive irritated fever. But if air be admitted, by a part of the abscess opening itself a way into the air-vessels of the lungs, a hectic fever, with colliquative sweats or diarrhœa, supervenes, and frequently destroys the patient; or the abscess heals, the lungs adhering to the pleura. See pleurodyne rheumatica. Class IV. 1. 2. 16.

M. M. The lancet must be used copiously, and repeated as often as the pain and difficult respiration increase. A blister on the pained part. Antimonial preparations. Diluents. Cool air. Do neutral salts increase the tendency to cough? Pediluvium or femicupium frequently repeated.

6. *Diaphragmitis*. Inflammation of the diaphragm. Pain round the lower ribs as if girt with a cord. Difficult respiration performed only by elevating the ribs and in an erect posture. The corners of the mouth frequently retracted into a disagreeable smile, called risus Sardonicus.

Those animals, which are furnished with clavicles, or collar-bones, not only use their foremost feet as hands, as men, monkeys, cats, mice, squirrels, &c. but elevate their ribs in respiration as well as depress the diaphragm for the purpose of enlarging the cavity of the chest. Hence an inflammation of the diaphragm is sudden death to those animals, as horses and dogs, which can only breathe by depressing the diaphragm; and is I sup-

pose the cause of the sudden death of horses that are over-worked; whereas, in the human animal, when the diaphragm is inflamed, so as to render its motions impossible from the pain they occasion, respiration can be carried on, though in a less perfect manner, by the intercostal muscles in the elevation of the ribs. In pleurisy the ribs are kept motionless, and the respiration is performed by the diaphragm, as may be readily seen on inspecting the naked chest, and which is generally a bad symptom; in the diaphragmitis the ribs are alternately elevated, and depressed, but the lower part of the belly is not seen to move.

M. M. As in pleurisy and peripneumony. When the patient becomes delirious, and smiles disagreeably by intervals, and is become so weak, that evacuations by the lancet could be used no further, and I have almost despaired of my patient, I have found in two or three instances, that about five or six drops of tinct. thebaic. given an hour before the evening exacerbation, have had the happiest effect, and cured the patient in this case, as well as in common peripneumony; it must be repeated two or three evenings, see Class II. 1. 2. 4. as the exacerbation of the fever, and difficult respiration, and delirium, generally increase towards night.

The stimulus of this small quantity of opium on a patient previously so much debilitated, acts by increasing the exertion of the absorbent vessels, in
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the same manner as a solution of opium, or any other stimulant, put on an inflamed eye after the vessels are previously emptied by evacuations, stimulates the absorbent system, so as to cause the remaining new vessels to be immediately re-absorbed. Which same stimulants would have increased the inflammation, if they had been applied before the evacuations. See Class II. 1. 2. 2. Sect. XXXIII. 3. 1. When the sanguiferous system is full of blood, the absorbents cannot act so powerfully, as the progress of their contents is opposed by the previous fulness of the blood-vessels; whence stimulants in that case increase the action of the secreting system more than of the absorbent one; but after copious evacuation this resistance to the progress of the absorbed fluids is removed; and when stimulants are then applied, they increase the action of the absorbent system more than that of the secreting one. Hence opium given in the commencement of inflammatory diseases destroys the patient; and cures them, if given in very small doses at the end of inflammatory diseases.

7. *Carditis*. Inflammation of the heart is attended with unequal intermitting pulse, palpitation, pain in the middle of the sternum, and constant vomiting. It cannot certainly be distinguished from peripneumony, and is perhaps always combined with it.

8. *Peritonitis*. Inflammation of the peritonæum is known by pain all over the abdomen, which is increased on erecting the body. It has probably most frequently a rheumatic origin, See Class II. 1. 2. 17.

9. *Mesenteritis*. Inflammation of the mesentery is attended with pains like colic, and with curdled or chyle-like stools. It is a very frequent and dangerous disease, as the production of matter more readily takes place in it than in any other viscus. The consequence of which, after a hard labour, is probably the puerperal fever; and in scrofulous habits a fatal purulent fever, or hopeless consumption.

M. M. Venesection. Warm bath. Emollient clysters.

10. *Gastritis*. In inflammation of the stomach the pulse is generally soft, probably occasioned by the sickness which attends it. The pain and heat of the stomach are increased by whatever is swallowed, with immediate rejection of it. Hiccough.

This disease may be occasioned by acrid or indigestible matters taken into the stomach, which may chemically or mechanically injure its interior coat. There is however a slighter species of inflammation of this viscus, and perhaps of all others, which is unattended by much fever; and which is sometimes induced by drinking cold water, or eating cold

cold insipid food, as raw turnips, when the person has been much heated and fatigued by exercise. For when the sensorial power has been diminished by great exertion, and the stomach has become less irritable by having been previously stimulated by much heat, it sooner becomes quiescent by the application of cold. In consequence of this slight inflammation of the stomach an eruption of the face frequently ensues by the sensitive association of this viscus with the skin, which is called a surfeit. See Class IV. I. 2. 13. and II. I. 4. 6. and II. I. 3. 19.

M. M. Venesection. Warm bath. Blister. Anodyne clysters. Almond soap. See Class II. I. 3. 17.

II. *Enteritis*. Inflammation of the bowels is often attended with soft pulse, probably owing to the concomitant sickness; which prevents sometimes the early use of the lancet, to the destruction of the patient. At other times it is attended with strong and full pulse like other inflammations of internal membranes. Can the seat of the disease being higher or lower in the intestinal canal, that is, above or below the valve of the colon, produce this difference of pulse by the greater sympathy of one part of the bowels with the stomach than another? In enteritis with strong pulse the pain is great about the navel, with vomiting, and the greatest difficulty in procuring a stool. In the other, the pain and fever are less, without vomiting, and with

Y 4. diarrhœa.

diarrhœa. Whence it appears, that the enteritis with hard quick pulse differs from ileus, described in Class I. 3. 1. 6. only in the existence of fever in the former and not in the latter, the other symptoms generally corresponding; and, secondly, that the enteritis with softer quick pulse, differs from the cholera described in Class I. 3. 1. 5. only in the existence of fever in the former, and not in the latter, the other symptoms being in general similar. See Class II. 1. 3. 20.

Inflammation of the bowels sometimes is owing to extraneous indigestible substances, as plum-stones, especially of the damasin, which has sharp ends. Sometimes to an intromission of one part of the intestine into another, and very frequently to a strangulated hernia or rupture. In respect to the first, I knew an instance where a damasin stone, after a long period of time, found its way out of the body near the groin. I knew another child, who vomited some damasin stones, which had lain for near twenty hours, and given great pain about the navel, by the exhibition of an emetic given in repeated doses for about an hour. The swallowing of plum-stones in large quantities, and even of cherry-stones, is annually fatal to many children. In respect to the intromission and hernia, see Ileus, Class I. 3. 1. 6.

M. M. Repeated venesection. Calomel from ten to twenty grains given in small pills as in ileus; these means used early in the disease generally succeed.

ceed. After these evacuations a blister contributes to stop the vomiting. Warm bath. Crude mercury. Aloes one grain-pill every hour will frequently stay in the stomach. Glauber's salt dissolved in pepper-mint water given by repeated spoonfuls.

When the patient is much reduced, opium in very small doses may be given, as a quarter of a grain, as recommended in pleurisy. If the pain suddenly ceases, and the patient continues to vomit up whatever is given him, it is generally fatal; as it indicates, that a mortification of the bowel is already formed. Some authors have advised to join cathartic medicines with an opiate in inflammation of the bowels, as recommended in colica saturnina. This may succeed in slighter cases, but is a dangerous practice in general; since, if the obstruction be not removed by the evacuation, the stimulus of the opium is liable to increase the action of the vessels, and produce mortification of the bowel, as I think I have seen more than once. Mercury injected by the anus, or water by a forcing-pump. See Ileus I. 3. 1. 6.

12. *Hepatitis.* Inflammation of the liver is attended with strong quick pulse; tension and pain of the right side; often pungent as in pleurisy, oftener dull. A pain is said to affect the clavicle, and top of the right shoulder; with difficulty in
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lying on the left side; difficult respiration; dry cough; vomiting; hiccough.

There is another hepatitis mentioned by authors, in which the fever, and other symptoms, are wanting, or are less violent; as described in Class II. 1. 4. 11. and which is probably sometimes relieved by eruptions of the face; as in those who are habituated to the intemperate use of fermented liquors.

M. M. Hepatic inflammation is very liable to terminate in suppuration, and the patient is destroyed by the continuance of a fever with sily blood, but without night-sweats, or diarrhœa, as in other unopened abscesses. Whence copious and repeated venesection is required early in the disease, with repeated doses of calomel, and cathartics. Warm bath. Towards the end of the disease small doses of opium before the evening paroxysms, and lastly the Peruvian bark, and chalybeate wine, at first in small doses, as 20 drops twice á day, and afterwards, if necessary, in larger. See Art. IV. 2. 6.

Towards the end of hepatitis, after repeated venesection and catharsis, an eruption sometimes appears round the lips, which is generally a salutary symptom: and the decoction of Peruvian bark given at this time, in the quantity of about two ounces every six hours, removes the remaining inflammatory tendency, and cures in a day or two.

Mrs. C. a lady in the last month of her pregnancy, was seized with violent hepatitis, with symptoms

toms both of peripneumony and of pleurisy, for it seldom happens in violent inflammations, that one viscus alone is affected; she wanted then about a fortnight of her delivery, and after frequent venesection, with gentle cathartics, with fomentation or warm bath, she recovered and was safely delivered, and both herself and child did well. Rheumatic and eruptive fevers are more liable to induce abortion.

13. *Splenitis*. Inflammation of the spleen commences with tension, heat, and tumour of the left side, and with pain, which is increased by pressure. A case is described in Class I. 2. 3. 18. where a tumid spleen, attended with fever, terminated in scirrhus of that viscus.

14. *Nephritis*. Inflammation of the kidney seems to be of two kinds; each of them attended with different symptoms, and different modes of termination. One of them I suppose to be an inflammation of the external membrane of the kidney, arising from general causes of inflammation, and accompanied with pain in the loins without vomiting; and the other to consist in an inflammation of the interior parts of the kidney, occasioned by the stimulus of gravel in the pelvis of it, which is attended with perpetual vomiting, with pain along the course of the ureter, and retraction of the testis on that side, or numbness of the thigh.

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The former of these kinds of nephritis is distinguished from lumbago by its situation being more exactly on the region of the kidney, and by its not being extended beyond that part; after three or four days I believe this inflammation is liable to change place; and that a herpes or erysipelas, called zona, or shingles, breaks out about the loins in its stead; at other times it is cured by a cathartic with calomel, with or without previous venesection.

The other kind of nephritis, or inflammation of the interior part of the kidney, generally arises from the pain occasioned by the stimulus of a stone entering the ureter from the pelvis of the kidney; and which ceases when the stone is protruded forwards into the bladder; or when it is returned into the pelvis of the kidney by the retrograde action of the ureter. The kidney is nevertheless inflamed more frequently, though in a less degree, from other causes; especially from the intemperate ingurgitation of ale, or other fermented or spirituous liquors. This less degree of inflammation is the cause of gravel, as that before mentioned is the effect of it. The mucus secreted to lubricate the internal surface of the uriniferous tubes of the kidney becomes secreted in greater quantity, when these vessels are inflamed; and, as the correspondent absorbent vessels act more energetically at the same time, the absorption of its more fluid parts is more powerfully effected; on both these accounts the mucus becomes

becomes both changed in quality and more indurated. And in this manner stones are produced on almost every mucous membrane of the body; as in the lungs, bowels, and even in the pericardium, as some writers have affirmed. See Class I. I. 3. 9.

M. M. Venesection. Ten grains of calomel given in small pills, then infusion of senna with oil. Warm bath. Then opium a grain and half. See Class I. I. 3. 9. for a further account of the method of cure.

15. *Cystitis*. Inflammation of the bladder is attended with tumor and pain of the lower part of the belly; with difficult and painful micturition; and tenesmus. It generally is produced by the existence of a large stone in the bladder, when in a great degree; or is produced by common causes, when in a slighter degree.

The stone in the bladder is generally formed in the kidney, and passing down the ureter into the bladder becomes there gradually increased in size; and this most frequently by the apposition of concentric spheres, as may be seen by sawing some of the harder calculi through the middle, and polishing one surface. These new concretions superinduced on the nucleus, which descended from the kidney, as described in Class I. I. 3. 9. and in the preceding article of this genus, is not owing to the microcosmic salt, which is often seen to adhere to the

the sides of chamber-pots, as this is soluble in warm water, but to the mucus of the bladder, as it rolls along the internal surface of it. Now when the bladder is slightly inflamed, this mucus of its internal surface is secreted in greater quantity, and is more indurated by the absorption of its more liquid part at the instant of secretion, as explained in Class I. 1. 3. 9. and II. 1. 2. 14. and thus the stimulus and pain of a stone in the bladder contribute to its enlargement by inflaming the interior coat of it.

M. M. Venesection. Warm bath. Diluents. Anodyne clysters. See Class I. 1. 3. 9.

16. *Hysteritis*. Inflammation of the womb is accompanied with heat, tension, tumour, and pain of the lower belly. The os uteri painful to the touch. Vomiting. This disease is generally produced by improper management in the delivery of pregnant women. I knew an unfortunate case, where the placenta was left till the next day; and then an unskilful accoucheur introduced his hand, and forcibly tore it away; the consequence was a most violent inflammatory fever, with hard throbbing pulse, great pain, very fizy blood, and the death of the patient. Some accoucheurs have had a practice of introducing their hand into the uterus immediately after the birth of the child, to take away the placenta; which they said was to save time. Many women I believe have been victims to this unnatural practice.

Others have received injury, where inflammation has been beginning, by the universal practice of giving a large dose of opium immediately on delivery, without any indication of its propriety; which, though a proper and useful medicine; where the patient is too feeble, when given in a small dose, as 10 drops of tincture of opium, or half a grain of solid opium, must do a proportionate injury, when it is given improperly; and as delivery is a natural process, it is certainly more wise to give no medicines, except there be some morbid symptom, which requires it; and which has only been introduced into custom by the ill-employed activity of the priests or priestesses of LUCINA; like the concomitant nonsense of cramming rue or rhubarb into the mouth of the unfortunate young stranger, who is thus soon made to experience the evils of life. See Class II. 1. 1. 12. and I. 1. 2. 5. Just so some over-wise beldames force young ducks and turkeys, as soon as they are hatched, to swallow a pepper corn.

M. M. Venesection repeatedly; diluents; fomentation; the patient should be frequently raised up in bed for a short time, to give opportunity of discharge to the putrid lochia; mucilaginous clysters. See Febris Puerpera.

17. *Lumbago sensitiva.* Sensitive lumbago. When the extensive membranes, or ligaments, which cover the muscles of the back are torpid, as
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in the cold paroxysm of ague, they are attended with pain in consequence of the inaction of the vessels, which compose them. When this inaction continues without a consequent renewal or increase of activity, the disease becomes chronical, and forms the *lumbago frigida*, or *irritativa*, described in Class I. 2. 4. 16. But when this cold fit or torpor of these membranes, or ligaments or muscles of the back, is succeeded by a hot fit, and consequent inflammation, a violent inflammatory fever, with great pain, occurs, preventing the erect posture of the body; and the affected part is liable to suppurate, in which case a very dangerous ulcer is formed, and a part of one of the *vertebræ* is generally found carious, and the patient sinks after a long time under the hectic fever occasioned by the aerated or oxygenated matter.

This disease bears no greater analogy to rheumatism than the inflammation of the pleura, or any other membranous inflammation; and has therefore unjustly been arranged under that name. It is distinguished from nephritis, as it is seldom attended with vomiting, I suppose never, except the ureter happens to be inflamed at the same time.

The pain sometimes extends on the outside of the thigh from the hip to the ankle, heel, or toes, and is then called *sciatica*; and has been thought to consist in an inflammation of the *theca*, or covering of the sciatic nerve, as the pain sometimes so

exactly attends the principal branches of that nerve. See Class I. 2. 4. 15. 16.

M. M. Venesection repeatedly; calomel; gentle cathartics; diluents; warm bath; poultice on the back, consisting of camomile flowers, turpentine, soap, and opium; a burgundy-pitch plaster. A debility of the inferior limbs from the torpor of the muscles, which had previously been too much excited, frequently occurs at the end of this disease; in this case electricity, and issues on each side of the lumbar vertebræ, are recommended. See Class I. 2. 4. 16.

18. *Ischias*. The ischias consists of inflammatory fever, with great pain about the pelvis, the os coccygis, and the heads of the thigh-bones, preventing the patient from walking or standing erect, with increase of pain on going to stool. This malady, as well as the preceding, has been ascribed to rheumatism; with which it seems to bear no greater analogy, than the inflammations of any other membranes.

The patients are left feeble, and sometimes lame after this disease; which is also sometimes accompanied with great flow of urine, owing to the defective absorption of its aqueous parts; and with consequent thirst occasioned by the want of so much fluid being returned into the circulation; a lodgment of fæces in the rectum sometimes occurs

after this complaint from the lessened sensibility of it. See Class I. 2. 4. 15.

M. M. Venesection; gentle cathartics; diluents; fomentation; poultice with camomile flowers, turpentine, soap, and opium; afterwards the bark. See Class I. 1. 3. 5.

When this inflammation terminates in suppuration the matter generally can be felt to fluctuate in the groin, or near the top of the thigh. In this circumstance, my friend Mr. Bent, surgeon, near Newcastle in Staffordshire, proposes to tap the abscess by means of a trocar, and thus as often as necessary to discharge the matter without admitting the air. Might a weak injection of wine and water, as in the hydrocele, be used with great caution to inflame the walls of the abscess, and cause them to unite? See Class II. 1. 6. 9.

19. *Paronychia interna*. Inflammation beneath the finger-nail. The pain occasioned by the inflammatory action and tumor of parts bound down between the nail on one side and the bone on the other, neither of which will yield, is said to occasion so much pain as to produce immediate delirium, and even death, except the parts are divided by a deep incision; which must pass quite through the periosteum, as the inflammation is said generally to exist beneath it. This disease is thus resembled by the process of toothing in young children;

children; where an extraneous body lodged beneath the periosteum induces pain and fever, and sometimes delirium, and requires to be set at liberty by the lancet.

ORDO I.

Increased Sensation.

GENUS III.

With the Production of new Vessels by external Membranes or Glands, with Fever.

THE diseases of this genus are perhaps all productive of contagious matter; or which becomes so by its exposure to the air, either through the cuticle, or by immediate contact with it; such are the matters of the small-pox and measles. The purulent matter formed on parts covered from the air by thicker membranes or muscles, as in the preceding genus, does not induce fever, and cannot therefore be called contagious; but it acquires this property of producing fever in a few hours, after the abscess has been opened, so as to admit the air to its surface, and may then be said to consist of contagious miasmata. This kind of contagious matter only induces fever, but does not produce other matter with properties similar to its own; and in this respect it differs from the contagious miasmata of small-pox or measles, but resembles those which have their origin in crowded jails; for these produce fever only, which frequently destroys the patient; but do not produce other matters similar to themselves; as appears from
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none of those who died of the jail-fever, caught at the famous black assizes at Oxford, at the beginning of this century, having infected their physicians or attendants.

If indeed the matter has continued so long as to become putrid, and thus to have given out air from a part of it, it acquires the power of producing fever; in the same manner as if the ulcer had been opened, and exposed to the common air; instances of which are not unfrequent. And from these circumstances it seems probable, that the matters secreted by the new vessels formed in all kinds of phlegmons, or pustules, are not contagious, till they have acquired something from the atmosphere, or from the gas produced by putrefaction; which will account for some phenomena in the lues venerea, cancer, and of other contagious secretions on the skin without fever, to be mentioned hereafter. See Class II. 1. 4. 14.

The theory of contagion has been perplexed by comparing it with fermenting liquors; but the contagious material is shewn in Section XXXIII. to be produced like other secreted matters by certain animal motions of the terminations of the vessels. Hence a new kind of gland is formed at the terminations of the vessels in the eruptions of the small-pox; the animal motions of which produce from the blood variolous matter; as other glands produce bile or saliva. Now if some of this matter is introduced beneath the cuticle of a

healthy person, or enters the circulation, and excites the extremities of the blood-vessels into those kinds of diseased motions, by which it was itself produced, either by irritation or association, these diseased motions of the extremities of the vessels will produce other similar contagious matter. See Sect. XXXIII. 2. 5. and 9. Hence contagion seems to be propagated two ways; one, by the stimulus of contagious matter applied to the part, which by an unknown law of nature excites the stimulated vessels to produce a similar matter; as in venereal ulcers, which thus continue to spread; or as when variolous matter is inserted beneath the cuticle; or when it is supposed to be absorbed, and diffused over the body mixed with the blood, and applied in that manner to the cutaneous glands. The other way, by which contagion seems to be diffused, is by some distant parts sympathizing or imitating the motions of the part first affected; as the stomach and skin in the eruptions of the inoculated small-pox, or in the bite of a mad dog; as treated of in Sect. XXII. 3. 3.

In some of the diseases of this genus, the pulse is strong, full, and hard, constituting the sensitive fever, as described in the preceding genus; as in one kind of erysipelas, which requires repeated venesection. In others the arterial action is sometimes moderate, so as to constitute the sensitive fever, as in the inoculated small-pox; where the action of the arteries is neither increased by
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the sensorial power of irritation, as in the sensitive irritated fever; nor decreased by the defect of that power, as in the sensitive inirritated fever. But in the greatest number of the diseases of this genus the arterial action is greatly diminished in respect to strength, and consequently the frequency of pulsation is proportionally increased, as explained in Sect. XXXII. 2. 1. Which is owing to the deficiency of the sensorial power of irritation joined with the increase of that of sensation, and thus constitutes the sensitive inirritated fever; as in scarlatina with gangrenous tonsils.

From this great debility of the action of the arteries, there appears to be less of the coagulable lymph or mucus secreted on their internal surfaces; whence there is not only a defect of that buff or size upon the blood, which is seen on the surface of that which is drawn in the sensitive irritated fever; but the blood, as it cools, when it has been drawn into a basin, scarcely coagulates; and is said to be dissolved, and is by some supposed to be in a state of actual putrefaction. See Sect. XXXIII. 1. 3. where the truth of this idea is controverted. But in the fevers of both this genus and the preceding one, great heat is produced from the chemical combinations in the secretions of new vessels and fluids, and pain or uneasiness from the distention of the old ones; till towards the termination of the disease sensation ceases, as well as

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irritation,

irritation, with the mortification of the affected parts, and the death of the patient.

Dysentery, as well as tonsillitis and aphtha, are enumerated amongst the diseases of external membranes, because they are exposed either to the atmospheric air, which is breathed and swallowed with our food and saliva; or they are exposed to the inflammable air, or hydrogen, which is generated in the intestines; both which contribute to produce or promote the contagious quality of these fluids; as mentioned in Class II. 1. 6.

It is not speaking accurate language, if we say, that, in the diseases of this genus the fever is contagious; since it is the material produced by the external membranes which is contagious, after it has been exposed to air; while the fever is the consequence of this contagious matter, and not the cause of it. As appears from the inoculated small-pox, in which the fever does not commence, till after suppuration has taken place in the inoculated arm, and from the diseases of the fifth genus of this order, where contagion exists without fever. See Class II. 1. 5. and II. 1. 3. 18.

The existence of contagious miasmata in the atmosphere was believed even in the time of Homer, and was allegorized under the title of the arrows of Apollo. See catarrhus contagiosus, II. 1. 3. 6. Of these it is probable, that some contagious matters are only diffused in the atmosphere,

sphere, as that of the small-pox, as it seems only to infect those who are very near the variolous patient; and seems to be swallowed with the saliva, and thence to affect the tonsils. Other contagions may be dissolved in the atmosphere, as that of the measles, and of epidemic catarrhs, which therefore first affect the membranes of the nostrils in men, and of the maxillary sinuses also in dogs and horses.

Contagious materials have been also believed from remote antiquity to lodge in the walls of rooms where the sick have been confined; as in the wards of hospitals, jails, ships, as well as in the bedding or clothes of the infected. The methods of purifying infected houses seem also to have been studied in the remotest times; the Levitical law directs the walls of the house of a leprous person to be scraped; and in modern times white-washings with lime and painting with oil have been directed, I believe with great success.

Mr. Cruickshank has lately recommended two or three parts of sulphur with one of nitre to be mixed together, and set in a room close shut up, and ignited by dropping a lighted coal upon it; as the nitre will supply sufficient oxygen to inflame the sulphur in a close apartment, and thus to fill the whole with the sulphurous vapour; so as to pass into every minute aperture of the walls or furniture.

Another means of sweetening the air of hospitals, where many ulcerous patients are crowded together,

together, has been also recommended, and might perhaps be used with salutary effect to restore the air of play-houses, churches, close parlours, courts of law, and other places, where many people resort without due ventilation, which consists in well mixing four ounces of common salt with two ounces of pulverized manganese in a basin, to these are then to be added about two ounces of water, and afterwards three ounces of concentrated sulphuric acid, in small portions at a time; and when managed in this way the gas is said not to be in the least offensive itself, and at the same time destroys disagreeable smells, and perhaps also infectious miasmata. Medical Review, No. 32.

The white vapours, not the red ones, of nitrous acid have been employed with wonderful success, by Dr. C. Smyth, in the hospital ships, without removing the patients; some sand is made hot in crucibles, many of which are brought into the rooms to be fumigated; in this hot sand is then set a tea-cup containing about half an ounce of concentrated vitriolic acid, to which, after it had acquired a proper heat, an equal quantity of nitre in powder is gradually added, and the mixture stirred with a glass spatula, till the vapour arises from it in considerable quantity. The crucible or pipkin is then carried about the wards by the nurses or convalescents, who walk about with them, like incense-pots, in their hands, and by thus fumigating the ship morning and night, with the care of washing
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ing the beds and clothes, and exposing them to the air, the contagion appeared to be quickly stopped, and the patients already affected soon recovered.

If any metallic vessel be used, the white nitrous vapour becomes red, and what was salutary before becomes now noxious, as is observed by Mr. Keir, in his letter on this subject, who adds, that though much vital air is extricated from the mixture, he rather ascribes its good effect to the known property of all mineral acids in stopping the processes of fermentation and putrefaction; as the contagious miasmata are presumed to consist of animal matter in some vicious kind of fermentation. Medical Review, Vol. III. p. 17.

SPECIES.

1. *Febris sensitiva inirritata*. Sensitive inirritated fever. Typhus gravior. Putrid malignant fever. Jail fever. The immediate cause of this disease is the increase of the sensorial power of sensation, joined with the decrease of the sensorial power of irritation; that is, it consists in the febris sensitiva joined with the febris inirritativa of Class I. 2. 1. 1. as the febris sensitiva irritata of the preceding genus consists of the febris sensitiva joined with the febris irritativa of Class I. 1. 1. 1. In both which the words irritata, and inirritata, are designed to express more or less irritation than the natural quantity;
and

and the same when applied to some of the diseases of this genus.

This fever is frequently accompanied with topical inflammation, which is liable, if the arterial strength is not supported, to end in sphacelus; and as mortified parts, such as sloughs of the throat, if they adhere to living parts, soon become putrid from the warmth and moisture of their situation; these fevers have been termed putrid, and have been thought to owe their cause to what is only their consequence. In hot climates this fever is frequently induced by the exhalations of stagnating lakes or marshes, which abound with animal substances; but which in colder countries produce fevers with debility only, as the quartan ague, without inflammation.

The sensitive irritated, or malignant, fever is also frequently produced by the putrid exhalations and stagnant air in prisons; but perhaps most frequently by contact or near approach of the persons who have resided in them. These causes of malignant fevers contributed to produce, and to support for a while, the septic and antiseptic theory of them; see Sect. XXXIII. 1. 3. The vibices or bruises, and petechiæ or purples, were believed to be owing to the dissolved state of the blood by its incipient putrefaction; but hydrostatical experiments have been made, which shew the fizy blood of the patient in sensitive irritated or inflammatory fever,

fever, with strong pulse, is more fluid, while it is warm, than this uncoagulable blood taken in this sensitive irritated, or malignant fever; from whence it is inferred, that these petechiæ, and vibices, are owing to the deficient power of absorption in the terminations of the veins. See Class I.

2. I. 5.

This sensitive irritated fever, or typhus gravior, is distinguished from the irritative fever, or typhus mitior, in the early stages of it, by the colour of the skin; which in the latter is paler, with less heat, owing to the less violent action of the capillaries; in this it is higher coloured, and hotter, from the greater energy of the capillary action in the production of new vessels. In the more advanced state petechiæ, and the production of contagious matter from inflamed membranes, as the aphthæ of the mouth, or ulcers of the throat, distinguish this fever from the former. Delirium, and dilated pupils of the eyes, are more frequent in nervous fevers; and stupor with deafness a more frequent attendant on malignant fevers. See Class I. 2. 5. 6.

There is another criterion discernible by the touch of an experienced finger; and that is, the coat of the artery in inflammatory fevers, both those attended with strength of pulsation, and these with weak pulsation, feels harder, or more like a cord; for the coats of the arteries in these fevers are themselves inflamed, and are consequently

quently turgid with blood, and thence are less easily compressed, though their pulsations are nevertheless weak: when the artery is large or full with an inflamed coat, it is called hard; and when small or empty with an inflamed coat, it is called sharp, by many writers.

M. M. The indications of cure consist, 1. In procuring a regurgitation of any offensive material, which may be lodged in the long mouths of the lacteals or lymphatics, or in their tumid glands. 2. To excite the system into necessary action by the repeated exhibition of nutrientia, forbentia, and incitantia; and to preserve the due evacuation of the bowels. 3. To prevent any unnecessary expenditure of sensorial power. 4. To prevent the formation of ulcers, or to promote the absorption in them, for the purpose of healing them.

1. One ounce of wine of ipecacuanha, or about ten grains of the powder, should be given as an emetic. After a few hours three or four grains of calomel should be given in a little mucilage, or conserve. Where something swallowed into the stomach is the cause of the fever, it is liable to be arrested by the lymphatic glands, as the matter of the small-pox inoculated in the arm is liable to be stopped by the axillary lymphatic gland; in this situation it may continue a day or two, or longer, and may be regurgitated during the operation of an emetic or cathartic into the stomach or bowel, as evidently happens on the exhibition of calomel,

as

as explained in Sect. XXIX. 7. 2. For this reason an emetic and cathartic, with venesection, if indicated by the hardness and fulness of the pulse, will very frequently remove fevers, if exhibited on the first, second, or even third day.

2. Wine and opium, in small doses repeated frequently, but so that not the least degree of intoxication follows, for in that case a greater degree of debility is produced from the expenditure of sensorial power in unnecessary motions. Many weak patients have been thus stimulated to death. See Sect. XII. 7. 8. The Peruvian bark should be given also in repeated doses in such quantity only as may strengthen digestion, not impede it. For these purposes two ounces of wine, or of ale, or cyder, should be given every six hours; and two ounces of decoction of bark, with two drachms of the tincture of bark, and six drops of tincture of opium, should be given also every six hours alternately; that is, each of them four times in twenty-four hours. As much rhubarb as may induce a daily evacuation, should be given to remove the colluvies of indigested materials from the bowels; which might otherwise increase the distress of the patient by the air it gives out in putrefaction, or by producing a diarrhoea by its acrimony; the putridity of the evacuations is owing to the total inability of the digestive powers; and their delay in the intestines, to the
inactivity

inactivity of that canal in respect to its peristaltic motions.

The quantities of wine or beer and opium, and bark, above-mentioned, may be increased by degrees, if the patient seems refreshed by them; and if the pulse becomes slower on their exhibition; but this with caution, as I have seen irrecoverable mischief done by greater quantities both of opium, wine, and bark, in this kind of fever; in which their use is to strengthen the digestion of the weak patient, rather than to stop the paroxysms of fever; but when they are administered in intermittents, much larger quantities are necessary.

The stimulus of small blisters applied in succession, one every three or four days, when the patient becomes weak, is of great service by strengthening digestion, and by preventing the coldness of the extremities, owing to the sympathy of the skin with the stomach, and of one part of the skin with another.

In respect to nutriment, the patient should be supplied with wine and water, with toasted bread, and sugar or spice in it; or with sago with wine; fresh broth with turnips, cellery, parsley; fruit; new milk. Tea with cream and sugar; bread-pudding, with lemon-juice and sugar; chicken, fish, or whatever is grateful to the palate of the sick person, in small quantity repeated frequently; with
small

small beer, cider and water, or wine and water, for drink, which may be acidulated with acid of vitriol in small quantities.

3. All unnecessary motions are to be checked, or prevented. Hence horizontal posture, obscure room, silence, cool air. All the parts of the skin, which feel too hot to the hand, should be exposed to a current of cool air, or bathed with cold water, whether there are eruptions on it or not. Wash the patient twice a day with cold vinegar and water, or cold salt and water, or cold water alone, by means of a sponge. If some parts are too cold, as the extremities, while other parts are too hot, as the face or breast, cover the cold parts with flannel, and cool the hot parts by a current of cool air, or bathing them as above.

4. For the healing of ulcers, if in the mouth, solution of alum in water about 40 grains to an ounce, or of blue vitriol in water, one grain or two to an ounce may be used to touch them with three or four times a day. Of these perhaps a solution of alum is to be preferred, as it instantly takes away the stench from ulcers I suppose by combining with the volatile alkali which attends it. For this purpose a solution of alum of an ounce to a pint of water should be frequently injected by means of a syringe into the mouth. If there are ulcers on the external skin, fine powder of bark seven parts, and cerussa in fine powder one

part, should be mixed, and applied dry on the fore, and kept on by lint, and a bandage.

As sloughs in the mouth are frequently produced by the previous dryness of the membranes which line it, this dryness should be prevented by frequently moistening them, which may be effected by injection with a syringe, or by a moist sponge, or lastly in the following manner. Place a glass of wine and water, or of milk and sugar, on a table by the bedside, a little above the level of the mouth of the patient; then, having previously moistened a long piece of narrow linsting, or cloth, or flannel, with the same liquor, leave one end of it in the glass, and introduce the other into the mouth of the patient; which will thus be supplied with a constant oozing of the fluid through the cloth, which acts as a capillary syphon.

The viscid phlegm, which adheres to the tongue, should be coagulated by some austere acid, as by lemon-juice evaporated to half its quantity, or by crab-juice; and then it may be scraped off by a knife, or rubbed off by flannel, or a sage-leaf dipped in vinegar, or in salt and water.

2. *Erysipelas*, St. Anthony's fire, may be divided into three kinds, which differ in their method of cure, the irritated, the inirritated, and the sensitive erysipelas.

Erysipelas irritatum is attended with increase of
irritation

irritation besides increase of sensation; that is, with strong, hard and full pulse, which requires frequent venesection, like other inflammations with arterial strength. It is distinguished from the phlegmonic inflammations of the last genus by its situation on the external habit, and by the redness, heat, and tumour, not being distinctly circumscribed; so that the eye or finger cannot exactly trace the extent of them.

When the external skin is the seat of inflammation, and produces sensitive irritated fever, no collection of matter is formed, as when a phlegmon is situated in the cellular membrane beneath the skin; but the cuticle rises as beneath a blister-plaster, and becomes ruptured; and a yellow material oozes out, and becomes inspissated, and lies upon its surface; as is seen in this kind of erysipelas, and in the confluent small-pox; or if the new vessels are reabsorbed the cuticle peels off in scales. This difference of the termination of erysipelatous and phlegmonic inflammation seems to be owing in part to the less distensibility of the cuticle than of the cellular membrane, and in part to the ready exhalation of the thinner parts of the secreted fluids through its pores.

This erysipelas is generally preceded by a fever for two or three days before the eruption, which is liable to appear in some places, as it declines in others; and seems frequently to arise from a previous scratch or injury of the skin; and is attended

sometimes with inflammation of the cellular membrane beneath the skin; whence a real phlegmon and collection of matter become joined to the erysipelas, and either occasion or increase the irritated fever, which attends it.

There is a greater sympathy between the external skin and the meninges of the brain, than between the cellular membrane and those meninges; whence erysipelas is more liable to be preceded, or attended, or succeeded, by delirium than internal phlegmons. I except the mumps, or parotitis, described below; which is properly an external gland, as its excretory duct opens into the air. When pain of the head or delirium precedes the cutaneous eruption of the face, there is some reason to believe, that the primary disease is a torpor of the meninges of the brain; and that the succeeding violent action is transferred to the skin of the face by sensitive association; and that a similar sympathy occurs between some internal membranes and the skin over them, when erysipelas appears on other parts of the body. If this circumstance should be supported by further evidence, this disease should be removed into Class IV. along with the rheumatism and gout. See Class IV. 1. 2. 17.

This supposed retropulsion of erysipelas on the brain from the frequent appearance of delirium, has prevented the free use of the lancet early in this disease to the destruction of many; as it has prevented the subduing of the general inflammation,

tion, and thus has in the end produced the particular one on the brain. Mr. B——, a delicate gentleman about sixty, had an erysipelas beginning near one ear, and extending by degrees over the whole head, with hard, full, and strong pulse; blood was taken from him four or five times in considerable quantity, with gentle cathartics, with calomel, diluents, and cool air, and he recovered without any signs of delirium, or inflammation of the meninges of the brain. Mr. W——, a strong corpulent man of inferior life, had erysipelas over his whole head, with strong hard pulse: he was not evacuated early in the disease through the timidity of his apothecary, and died delirious. Mrs. F—— had erysipelas on the face, without either strong or weak pulse; that is, with sensitive fever alone, without superabundance or deficiency of irritation; and recovered without any but natural evacuations. From these three cases of erysipelas on the head, it appears that the evacuations by the lancet must be used with courage, where the degree of inflammation requires it; but not where this degree of inflammation is small, nor in the erysipelas attended with irritation, as described below.

M. M. Venesection repeated according to the degree of inflammation. An emetic. Calomel, three grains every other night. Cool air. Diluents, emetic tartar in small doses, as a quarter of

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a grain

a grain every six hours. Tea, weak broth, gruel, lemonade, neutral salts. See Sect. XII. 6.

Such external applications as carry away the heat of the skin may be of service, as cold water, cold flour, snow, ether. Because these applications impede the exertions of the secerning vessels, which are now in too great action; but any applications of the stimulant kind, as solutions of lead, iron, copper, or of alum, used early in the disease, must be injurious; as they stimulate the secerning vessels, as well as the absorbent vessels, into greater action; exactly as occurs when stimulant eye-waters are used too soon in ophthalmy. See Class II. 1. 2. 2. But as the cuticle peels off in this case after the inflammation ceases, it differs from ophthalmy; and stimulant applications are not indicated at all, except where symptoms of gangrene appear. For as a new cuticle is formed under the old one, as under a blister, the serous fluid between them is a defence to the new cuticle, and should dry into a scab by exhalation rather than be re-absorbed. Hence we see how greasy or oily applications, and even how moist ones, are injurious in erysipelas; because they prevent the exhalation of the serous effusion between the old and new cuticle, and thus retard the formation of the latter.

Erysipelas inirritatum differs from the former in its being attended with weak pulse, and other symptoms of sensitive inirritated fever. The feet and legs

are particularly liable to this erysipelas, which precedes or attends the sphacelus or mortification of those parts. A great and long coldness first affects the limb, and the erysipelas on the skin seems to occur in consequence of the previous torpor of the interior membranes. As this generally attends old age, it becomes more dangerous in proportion to the age, and also to the habitual intemperance of the patient in respect to the use of fermented or spirituous liquor.

When the former kind, or irritated erysipelas, continues long, the patient becomes so weakened as to be liable to all the symptoms of this inirritated erysipelas; especially where the meninges of the brain are primarily affected. As in that case, after two or three efforts have been made to remove the returning periods of torpor of the meninges to the external skin, those meninges become inflamed themselves, and the patient sinks under the disease; in a manner similar to that in old gouty patients, where the torpor of the liver or stomach is relieved by association of the inflammation of the membranes of the feet, and then of other joints, and lastly the power of association ceasing to act, but the excess of sensation continuing, the liver or stomach remains torpid, or becomes itself inflamed, and the patient is destroyed.

M. M. Where there exists a beginning gangrene of the extremities, the Peruvian bark, and wine, and opium, are to be given in large quantities; so as to strengthen the patient, but not to

intoxicate, or to impede his digestion of aliment, as mentioned in the first species of this genus. Class II. 1. 2. 1. But where the brain is inflamed or oppressed, which is known either by delirium, with quick pulse; or by stupor, and slow respiration with slow pulse; other means must be applied. Such as, first, a fomentation on the head with warm water, with or without aromatic herbs, or salt in it, should be continued for an hour or two at a time, and frequently repeated. A blister may also be applied on the head, and the fomentation nevertheless occasionally repeated. Internally very gentle stimulants, as camphor one grain or two in infusion of valerian. Wine and water, or small beer, weak broth. An enema. Six grains of rhubarb and one of calomel. Afterwards five drops of tincture of opium, which may be repeated every six hours, if it seems of service. Might the head be bathed for a minute with cold water? or with ether? or vinegar?

Erysipelas sensitivum is a third species, differing only in the kind of fever which attends it, which is simply inflammatory, or sensitive, without either excess of irritation, as in the first variety; or the defect of irritation, as in the second variety: all these kinds of erysipelas are liable to return by periods in some people, who have passed the middle of life, as at periods of a lunation, or two lunations, or at the equinoxes. When these periods of erysipelas happen to women, they seem to supply the place

place of the receding catamenia; when to men, I have sometimes believed them to be associated with a torpor of the liver; as they generally occur in those who have drunk vinous spirit excessively, though not opprobriously; and that hence they supply the place of periodical piles, or gout, or gutta rosea.

M. M. As the fever requires no management, the disease takes its progress safely, like a moderate paroxysm of the gout; but in this case, as in some of the former, the erysipelas does not appear to be a primary disease, and should perhaps be removed to the Class of Association.

3. *Tonsillitis*. Inflammation of the tonsils. The uncouth term Cynanche has been used for diseases so dissimilar, that I have divided them into Tonsillitis and Parotitis; and hope to be excused for adding a Greek termination to a Latin word, as one of those languages may justly be considered as a dialect of the other. By tonsillitis the inflammation of the tonsils is principally to be understood; but as all inflammations generally spread further than the part first affected; so, when the summit of the windpipe is also much inflamed, it may be termed tonsillitis trachealis, or croup. See Class I. 1. 3. 4. and II. 1. 2. 4.; and when the summit of the gullet is much inflamed along with the tonsil, it may be called tonsillitis pharyngea, as described in Dr. Cullen's Nosologia, Genus X.

p. 92. The inflammation of the tonsils may be divided into three kinds, which require different methods of cure.

Tonsillitis interna. Inflammation of the internal tonsil. When the swelling is so considerable as to produce difficulty of breathing, the size of the tonsil should be diminished by cutting it with a proper lancet, which may either give exit to the matter it contains, or may make it less by discharging a part of the blood. This kind of angina is frequently attended with irritated fever besides the sensitive one, which accompanies all inflammation, and sometimes requires venesection. An emetic should be given early in the disease, as by its inducing the retrograde action of the vessels about the fauces during the nausea it occasions, it may eliminate the very cause of the inflammation; which may have been taken up by the absorbents, and still continue in the mouths of the lymphatics or their glands. The patient should then be induced to swallow some aperient liquid, as an infusion of fenna, so as to induce three or four evacuations. Gargles of all kinds are rather hurtful, as the action of using them is liable to give pain to the inflamed parts; but the patients find great relief from frequently holding warm water in their mouths, and putting it out again, or by syringing warm water into the mouth, as this acts like a warm bath, or fomentation to the inflamed part. Lastly, some mild stimulant, as a weak solution of salt and water,

ter, or of white vitriol and water, may be used to wash the fauces with in the decline of the disease, to expedite the absorption of the new vessels, if necessary, as recommended in ophthalmy.

Tonsillitis superficialis. Inflammation of the surface of the tonsils. As the tonsils and parts in their vicinity are covered with a membrane, which though exposed to currents of air, is nevertheless constantly kept moist by mucus and saliva, and is liable to diseases of its surface like other mucous membranes, as well as to suppuration of the internal substance of the gland; the inflammation of its surface is succeeded by small elevated pustules with matter in them, which soon disappears, and the parts either readily heal, or ulcers covered with sloughs are left on the surface.

This disease is generally attended with only sensitive fever, and therefore is of no danger, and may be distinguished with great certainty from the dangerous inflammation or gangrene of the tonsils at the height of the small-pox, or scarlet fever, by its not being attended with other symptoms of those diseases. One emetic and a gentle cathartic is generally sufficient; and the frequent swallowing of weak broth, or gruel, both without salt in them, relieves the patient, and absolves the cure. When these tumours of the tonsils frequently return I have sometimes suspected them to originate from the absorption of putrid matter
from

from decaying teeth. See Class I. 2. 3. 21. and II. 2. 2. 1.

Tonsillitis inirritata. Inflammation of the tonsils with sensitive inirritated fever is a symptom only of contagious fever, whether attended with scarlet eruption, or with confluent small-pox, or otherwise. The matter of contagion is generally diffused, not dissolved in the air; and as this is breathed over the mucaginous surface of the tonsils, the contagious atoms are liable to be arrested by the tonsil; which therefore becomes the nest of the future disease, like the inflamed circle round the inoculated puncture of the arm in supposititious small-pox. The swelling is liable to suffocate the patient in small-pox, and to become gangrenous in scarlet fever, and some other contagious fevers, which have been received in this manner. The existence of inflammation of the tonsil previous to the scarlet eruption, as the arm inflames in the inoculated small pox, and suppurates before the variolous eruption, should be a criterion of the scarlet fever being taken in this manner.

M. M. All the means which strengthen the patient, as in the sensitive inirritated fever, Class II. 1. 2. 1. As it is liable to continue a whole lunation or more, great attention should be used to nourish the patient with acidulous and vinous panada, broth with vegetables boiled in it, sugar, cream, beer; all which given frequently will contribute

tribute much to moisten, clean, and heal the ulcers, or sloughs, of the throat; warm water and wine, or acid of lemon, should be frequently applied to the tonsils by means of a syringe, or by means of a capillary syphon, as described in Class II.

1. 2. 1. A slight solution of blue vitriol, as two grains to an ounce, or a solution of sugar of lead of about six grains to an ounce, may be of service; especially the latter, applied to the edges of the sloughs, drop by drop by means of a small glass tube, or small crow-quill with the end cut off, or by a camel's-hair pencil or sponge; to the end of either of which a drop will conveniently hang by capillary attraction; as solutions of lead evidently impede the progress of erysipelas on the exterior skin, when it is attended with feeble pulse. Yet a solution of alum injected frequently by a syringe is perhaps to be preferred, as it immediately removes the fetor of the breath, which must much injure the patient by its being perpetually received into the lungs by respiration.

4. *Parotitis*. Mumps, or branks, is a contagious inflammation of the parotis and maxillary glands, and has generally been classed under the word Cynanche or Angina, to which it bears no analogy. It divides itself into two kinds, which differ in the degree of fever which attends them, and in the method of cure.

Parotitis

Parotitis suppurans. The suppurating mumps is to be distinguished by the acuteness of the pain, and the sensitive, irritated, or inflammatory fever, which attends it.

M. M. Venesection. Cathartic with calomel three or four grains repeatedly. Cool air, diluents. This antiphlogistic treatment is to be continued no longer than is necessary to relieve the violence of the pain, as the disease is attended with contagion, and must run through a certain time, like other fevers with contagion.

Parotitis mutabilis. Mutable parotitis. A sensitive fever only, or a sensitive irritated fever, generally attends this kind. And when the tumour of the parotis and maxillary glands subsides, a new swelling occurs in some distant part of the system; as happens to the hands and feet, at the commencement of the secondary fever of the small-pox, when the tumor of the face subsides. This new swelling in the parotitis mutabilis is liable to affect the testes in men, and form a painful tumor, which should be prevented from suppuration by very cautious means, if the violence of the pain threaten such a termination; as by bathing the part with coldish water for a time, venesection, a cathartic; or by a blister on the perinæum, or scrotum, or a poultice.

When women are affected with this complaint, after the swelling of the parotis and maxillary glands

glands subside, tumor with pain is liable to affect their breasts; which, however, I have never seen terminate in suppuration.

On the retrocession of the tumor of the testes above described, and I suppose of that of the breasts in women, a delirium of the calm kind is very liable to occur; which in some cases has been the first symptom which has alarmed the friends of the patient; and it has thence been difficult to discover the cause of it without much inquiry; the previous symptoms having been so slight as not to have occasioned any complaints. In this delirium, if the pulse will bear it, venesection should be used, and three or four grains of calomel, with fomentation of the head with warm water for an hour together every three or four hours.

Though this disease generally terminates favourably, considering the numbers attacked by it, when it is epidemic, yet it is dangerous at other times in every part of its progress. Sometimes the parotis or maxillary glands suppurate, producing ulcers which are difficult to cure, and frequently destroy the patient, where there was a previous scrofulous tendency. The testis in men is also liable to suppurate with great pain, long confinement, and much danger; and lastly, the affection of the brain is fatal to many.

Mr. W. W. had a swelled throat, which after a few days subsided. He became delirious or stupid, in which state he was dying when I saw him; and his

his friends ascribed his death to a coup de soleil, which he was said to have received some months before, when he was abroad.

Mr. A. B. had a swelling of the throat, which after a few days subsided. When I saw him he had great stupor, with slow breathing, and partial delirium. On fomenting his head with warm water for an hour these symptoms of stupor were greatly lessened, and his oppressed breathing gradually ceased, and he recovered in one day.

Mr. C. D. I found walking about the house in a calm delirium without stupor; and not without much inquiry of his friends could get the previous history of the disease; which had been attended with parotitis, and swelled testis, previous to the delirium. A few ounces of blood were taken away, a gentle cathartic was directed, and his head fomented with warm water for an hour, with a small blister on the back, and he recovered in two or three days.

Mr. D. D. came down from London in the coach alone, so that no previous history could be obtained. He was walking about the house in a calm delirium, but could give no sensible answers to any thing which was proposed to him. His pulse was weak and quick. Cordials, a blister, the bark, were in vain exhibited, and he died in two or three days.

Mr. F. F. came from London in the same manner in the coach. He was mildly delirious with considerable

siderable stupor, and moderate pulse, and could give no account of himself. He continued in a kind of cataleptic stupor, so that he would remain for hours in any posture he was placed, either in his chair, or in bed; and did not attempt to speak for about a fortnight, and then gradually recovered. These two last cases are not related as being certainly owing to parotitis, but as they might probably have that origin.

The parotitis suppurans, or mumps with irritated fever, is at times epidemic among cats, and may be called *parotitis felina*; as I have reason to believe from the swellings under the jaws, which frequently suppurate, and are very fatal to those animals. In the village of Haywood, in Staffordshire, I remember a whole breed of Persian cats, with long white hair, was destroyed by this malady, along with almost all the common cats of the neighbourhood; and as the parotitis or mumps had not long before prevailed amongst human beings in that part of the country, I recollect being inclined to believe, that the cats received the infection from mankind; though in all other contagious diseases, except the rabies canina can be so called, no different genera of animals naturally communicate infection to each other; and I am informed, that vain efforts have been made to communicate the small-pox and measles to some quadrupeds by inoculation. A disease of the head and

neck destroyed almost all the cats in Westphalia. Savage, Nofol. Class X. Art. 30. 8.

Since the above was first published, the cow-pox, variolæ vaccinae, has been successfully inoculated on the human subject, and produced a disease in some respects similar to the small-pox. See Variolæ.

5. *Catarrhus sensitivus* consists of an inflammation of the membrane, which lines the nostrils and fauces. It is attended with sensitive fever alone, and is cured by the steam of warm water externally, and by diluents internally, with moderate venesection and gentle cathartics. This may be termed catarrhus sensitivus, to distinguish it from the catarrhus contagiosus, and is in common language called a violent cold in the head; it differs from the catarrhus calidus, or warm catarrh, of Class I. 1. 2. 7. in the production of new vessels, or inflammation of the membrane, and the consequent more purulent appearance of the discharge.

Raucedo catarrhalis, or catarrhal hoarseness, is a frequent symptom of this disease, and is occasioned by the pain or soreness which attends the thickened and inflamed membranes of the larynx; which prevents the muscles of vocality from sufficiently contracting the aperture of it. It ceases with the inflammation, or may be relieved by the steam of warm water alone, or of water and vinegar,

gar, or of water and ether. See Paralytic Hoarseness, Class III. 2. 1. 4.

6. *Catarrhus contagiosus*. This malady attacks so many at the same time, and spreads gradually over so great an extent of country, that there can be no doubt but that it is disseminated by the atmosphere. In the year 1782 the sun was for many weeks obscured by a dry fog, and appeared red as through a common mist. The material, which thus rendered the air muddy, probably caused the epidemic catarrh, which prevailed in that year, and which began far in the north, and extended itself over all Europe. See Botanic Garden, Vol. II. note on Chunda, and Vol. I. Canto IV. line 294, note; and was supposed to have been thrown out of a volcano, which much displaced the country of Iceland.

In many instances there was reason to believe, that this disease became contagious, as well as epidemic; that is, that one person might receive it from another, as well as by the general unsalutary influence of the atmosphere. This is difficult to comprehend, but may be conceived by considering the increase of contagious matter in the small-pox. In that disease one particular of contagious matter stimulates the skin of the arm in inoculation into morbid action so as to produce a thousand particles similar to itself; the same thing occurs in catarrh, a few deleterious atoms stimulate the mucous mem-

brane of the nostrils into morbid actions, which produce a thousand other particles similar to themselves. These contagious particles diffused in the air must have consisted of animal matter, otherwise how could an animal body by being stimulated by them produce similar particles? Could they then have had a volcanic origin, or must they not rather have been blown from putrid marshes full of animal matter? But the greatest part of the solid earth has been made from animal and vegetable recrements, which may be dispersed by volcanoes. —Future discoveries must answer these questions.

As the sensitive fever attending these epidemic catarrhs is seldom either much irritated or inirritated, venesection is not always either clearly indicated or forbidden; but as those who have died of these catarrhs have generally had inflamed livers, with consequent suppuration in them, venesection is advisable, wherever the cough and fever are greater than common, so as to render the use of the lancet in the least dubious. And in some cases a second bleeding was necessary, and a mild cathartic or two with four grains of calomel; with mucilaginous subacid diluents; and warm steam occasionally to alleviate the cough, finished the cure.

The catarrhus contagiosus is a frequent disease amongst horses and dogs; it seems first to be disseminated amongst these animals by miasmata diffused in the atmosphere, because so many of them receive it at the same time; and afterwards to be

communicable from one horse or dog to another by contagion, as above described. These epidemic or contagious catarrhs more frequently occur amongst dogs and horses than amongst men; which is probably owing to the greater extension and sensibility of the mucous membrane, which covers the organ of smell, and is diffused over their wide nostrils, and their large maxillary and frontal cavities. And to this circumstance may be ascribed the greater fatality of it to these animals.

In respect to horses, I suspect the fever at the beginning to be of the sensitive, irritated, or inflammatory kind, because there is so great a discharge of purulent mucus; and that therefore they will bear once bleeding early in the disease; and also one mild purgative, consisting of about half an ounce of aloe, and as much white hard soap, mixed together. They should be turned out to grass both day and night for the benefit of pure air, unless the weather be too cold (and in that case they should be kept in an open airy stable, without being tied), that they may hang down their heads to facilitate the discharge of the mucus from their nostrils. Grass should be offered them, or other fresh vegetables, as carrots and potatoes, with mashes of malt, or of oats, and with plenty of fresh warm or cold water frequently in a day. When symptoms of debility appear, which may be known by the coldness of the ears or other extremities, or when sloughs can be seen on the membrane, which lines

the nostrils, a drink consisting of a pint of ale with half an ounce of tincture of opium in it, given every six hours, is likely to be of great utility.

In dogs I believe the catarrh is generally joined with symptoms of debility early in the disease. These animals should be permitted to go about in the open air, and should have constant access to fresh water. The use of being as much as may be in the air is evident, because all the air, which they breathe, passes twice over the putrid sloughs of the mortified parts of the membrane, which lines the nostrils, and the maxillary and frontal cavities; that is, both during inspiration and expiration; and must therefore be loaded with contagious particles. Fresh new milk, and fresh broth, should be given them very frequently, and they should be suffered to go amongst the grass, which they sometimes eat for the purpose of an emetic; and if possible should have access to a running stream of water. As the contagious mucus of the nostrils, both of these animals and of horses, generally drops into the water, they attempt to drink. Bits of raw flesh, if the dog will eat them, are preferred to cooked meat; and from five to ten drops of tincture of opium may be given with advantage, when symptoms of debility are evident, according to the size of the dog, every six hours. If sloughs can be seen in the nostrils, they should be moistened twice a day, both in horses and dogs, with a solution of sugar of lead, or of alum, by means of a sponge
fixed

fixed on a bit of whale-bone, or by a syringe. The lotion may be made by dissolving half an ounce of sugar of lead, or of alum, in a pint of water.

Ancient philosophers seem to have believed, that the contagious miasmata in their warm climates affected horses and dogs previous to mankind. If those contagious particles were supposed to be diffused amongst the heavy inflammable air, or carbonated hydrogen, of putrid marshes, as these animals hold their heads down lower to the ground, they may be supposed to have received them sooner than men. And though men and quadrupeds might receive a disease from the same source of marsh-putrefaction, they might not afterwards be able to infect each other, though they might infect other animals of the same genus; as the new contagious matter generated in their own bodies might not be precisely similar to that received; as happened in the jail-fever at Oxford, where those who took the contagion and died, did not infect others.

On mules and dogs the infection first began,
And, last, the vengeful arrows fix'd on man,

POPE'S Homer's Iliad, I.

7. *Peripneumonia superficialis*. The superficial or spurious peripneumony consists in an inflammation of the membrane, which lines the bronchia, and bears the same analogy to the true peripneu-

mony, as the inflammations of other membranes do to that of the parenchyma, or substantial parts of the viscus, which they surround. It affects elderly people, and frequently occasions their death; and exists at the end of the true peripneumony, or along with it; when the lancet has not been used sufficiently to cure by reabsorbing the inflamed parts, or what is termed by resolution.

M. M. Diluents, mucilage, antimonials, warmish air constantly changed, venesection once, perhaps twice, if the pulse will bear it. Oily volatile draughts. Balsams? Neutral salts increase the tendency to cough. Blisters in succession about the chest. Warm bath. Mild purgatives. Very weak chicken broth without salt in it. Boiled onions. One grain of calomel every night for a week. From five drops to ten of tincture of opium at six every night, when the patient becomes weak. Digitalis? See Class II. 1. 6. 7.

8. *Pertussis*. Tussis convulsiva. Chincough resembles peripneumonia superficialis in its consisting in an inflammation of the membrane which lines the air-vessels of the lungs; but differs in the circumstance of its being contagious; and is on that account of very long duration; as the whole of the lungs are probably not infected at the same time, but the contagious inflammation continues gradually to creep on the membrane. It may in this respect be compared to the ulcers in the

the pulmonary consumption; but it differs in this, that in chincough some branches of the bronchia heal, as others become inflamed.

This complaint is not usually classed amongst febrile disorders, but a sensitive fever may generally be perceived to attend it during some part of the day, especially in weak patients. And a peripneumony very frequently supervenes, and destroys great numbers of children, except the lancet or four or six leeches be immediately and repeatedly used. When the child has permanent difficulty of breathing, which continues between the coughing fits: unless blood be taken from it, it dies in two, three, or four days of the inflammation of the lungs. During this permanent difficulty of breathing, the whooping-cough abates, or quite ceases, and returns again after once or twice bleeding; which is then a good symptom, as the child now possessing the power to cough shews the difficulty of breathing to be abated. I dwell longer upon this, because many lose their lives from the difficulty there is in bleeding young children; where the apothecary is old or clumsy, or is not furnished with a very sharp and fine-pointed lancet. In this distressing situation the application of four leeches to one of the child's legs, the wounds made by which should continue to bleed an hour or two, is a succedaneum; and saves the patient, if repeated once or twice, according to the difficulty of the respiration.

The

The chin-cough seems to resemble the gonorrhœa venerea in several circumstances. They are both received by infection, are both diseases of the mucous membrane, are both generally cured in four or six weeks without medicine. If ulcers in the cellular membrane under the mucous membrane occur, they are of a phagedenic kind, and destroy the patient in both diseases, if no medicine be administered.

Hence the cure should be similar in both these diseases; first general evacuations and diluents, then, after a week or two, I have believed the following pills of great advantage. The dose for a child of about three years old was one-sixth part of a grain of calomel, one-sixth part of a grain of opium, and two grains of rhubarb, to be taken twice a day.

The opium promotes absorption from the mucous membrane, and hence contributes to heal it. The mercury prevents ulcers from being formed under the mucous membrane, or cures them, as in the lues venerea; and the rhubarb is necessary to keep the bowels open.

M. M. Antimonial vomits frequently repeated. Mild cathartics. Cool air. Tincture of cantharides, or repeated blisters; afterwards opiates in small doses, and the bark. Warm bath frequently used. The steam of warm water with a little vinegar in it may be inhaled twice a day. Thirty drops of saturated tincture of digitalis purpurea, purple

purple foxglove, were given twice a day to a lady, seventy years of age, in this disease, with great and almost immediate advantage. I have since given from five to ten drops twice a day to two children, with also great apparent advantage. See Art. IV. 2. 3. 7. Arsenic has lately been recommended in the whooping cough. See Art. IV. 2. 6. 9. And externally a solution of 20 grains of emetic tartar, antimonium tartarifatum, in two ounces of water, to which is to be added one ounce of tincture of cantharides, is recommended, by Dr. Struve of America, to be rubbed very frequently on the region of the stomach. Could the breathing of carbonic acid gas mixed with atmospheric air be of service? Copious venesection, when a difficulty of breathing continues between the fits of coughing; otherwise the cough and the expectoration cease, and the patient is destroyed. Ulcers of the lungs sometimes supervene, and the phthisis pulmonalis in a few weeks terminates in death. Where the cough continues after some weeks without much of the whooping, and a sensitive fever daily supervenes, so as to resemble hectic fever from ulcers of the lungs; change of air for a week or fortnight acts as a charm; and restores the patient beyond the hopes of the physician.

Young children should lie with their heads and shoulders raised; and should be constantly watched day and night; that when the cough occurs, they may be held up easily, so as to stand upon their feet

feet bending a little forwards; or nicely supported in that posture which they seem to put themselves into. A bow of whalebone, about the size of the bow of a key, is very useful to extract the phlegm out of the mouths of infants at the time of their coughing; as a handkerchief, if applied at the time of their quick inspirations after long holding their breath is dangerous, and may suffocate the patient in an instant, as I believe has sometimes happened.

9. *Variola discreta*. The small-pox is well divided by Sydenham into distinct and confluent. The former consists of distinct pustules, which appear on the fourth day of the fever, are circumscribed and turgid; the fever ceasing when the eruption is complete. Head-ach, pain in the loins, vomiting frequently, and convulsive fits sometimes, precede the eruption.

The distinct small-pox is attended with sensitive fever only, when very mild, as in most inoculated patients; or with sensitive irritated fever, when the disease is greater: the danger in this kind of small-pox is owing either to the tumor and foreness of the throat about the height, or eighth day of the eruption; or to the violence of the secondary fever. For, first, as the natural disease is generally taken by particles of the dust of the contagious matter dried and floating in the air, these are liable to be arrested by the mucus about the throat and
tonsils

tonsils in their passage to the lungs, or to the stomach, when they are previously mixed with saliva in the mouth. Hence the throat inflames like the arm in inoculated patients; and this increasing, as the disease advances, destroys the patient about the height.

Secondly, all those upon the face and head come out about the same time, namely, about one day before those on the hands, and two before those in the trunk; and thence, when the head is very full, a danger arises from the secondary fever, which is a purulent not a variolous fever; for as the matter from all these of the face and head is reabsorbed at the same time, the patient is destroyed by the violence of this purulent fever; which in the distinct small-pox can only be abated by venesection and cathartics; but in the confluent small-pox requires cordials and opiates, as it is attended with arterial debility. See Sect. XXXV. 1. and XXXIII. 2. 10.

When the pustules on the face recede, the face swells; and when those of the hands recede, the hands swell; and the same of the feet in succession. These swellings seem to be owing to the absorption of variolous matter, which by its stimulus excites the cutaneous vessels to secrete more lymph, or serum, or mucus, exactly as happens by the stimulus of a blister. Now, as a blister sometimes produces strangury many hours after it has risen, it is plain, that a part of the cantharides is absorbed,

forbed, and carried to the neck of the bladder; whether it enters the circulation, or is carried thither by retrograde movements of the urinary branch of lymphatics; and by parity of reasoning the variolous matter is absorbed, and swells the face and hands by its stimulus.

Variola confluens. The confluent small-pox consists of numerous pustules, which appear on the third day of the fever, flow together, are irregularly circumscribed, flaccid, and little elevated; the fever continuing after the eruption is complete; convulsions do not precede this kind of small-pox, and are so far to be esteemed a favourable symptom.

The confluent small-pox is attended with sensitive irritated fever, or inflammation with arterial debility; whence the danger of this disease is owing to the general tendency to gangrene, with petechiæ, or purple spots, and hæmorrhages; besides the two sources of danger from the tumor of the throat about the height, or eleventh day of the eruption, and the purulent fever after that time; which are generally much more to be dreaded in this than in the distinct small-pox described above.

M. M. The method of treatment must vary with the degree and kind of fever. Venesection may be used in the distinct small-pox early in the disease, according to the strength or hardness of the pulse; and perhaps on the first day of the confluent

fluent small-pox, and even of the plague, before the sensorial power is exhausted by the violence of the arterial action? Cold air, and even washing or bathing in cold water, is a powerful means in perhaps all eruptive diseases attended with fever; as the quantity of eruption depends on the quantity of the fever, and the activity of the cutaneous vessels; which may be judged of by the heat produced on the skin; and which latter is immediately abated by exposure to external cold. Mercurial purges, as three grains of calomel repeated every day during the eruptive fever, so as to induce three or four stools, contribute to abate inflammation; and is believed by some to have a specific effect on the variolous, as it is supposed to have on the venereal contagion.

It has been said, that opening the pock and taking out the matter has not abated the secondary fever; but as I had conceived, that the pits, or marks, left after the small-pox, were owing to the acrimony of the matter beneath the hard scabs, which not being able to exhale eroded the skin, and produced ulcers, I directed the faces of two patients in the confluent small-pox to be covered with cerate early in the disease, which was daily renewed; and I was induced to think, that they had much less of the secondary fever, and were so little marked, that one of them, who was a young lady, almost entirely preserved her beauty. Perhaps mercurial plasters, or cerates, made without turpentine

turpentine in them, might have been more efficacious in preventing the marks, and especially if applied early in the disease, even on the first day of the eruption, and renewed daily. For it appears from the experiments of Van Woenfel, that calomel or corrosive sublimate, triturated with variolous matter, incapacitates it from giving the disease by inoculation. Calomel or sublimate given as an alterative for ten days before inoculation, and till the eruptive fever commences, is said with certainty to render the disease mild by the same author. Exper. on Mercury by Van Woenfel, translated by Dr. Fowle, Salisbury.

C. Deffarts, in the sitting of the French national institute is said to have adduced a number of facts to prove, that the natural small-pox is rendered much milder by the use of mercurial remedies; which I suppose is probably true, as mercurials increase the absorption in many other ulcers, and consequently diminish the acrimony of the matter, and forward their healing.

Variola inoculata. The world is much indebted to the great discoverer of the good effects of inoculation, whose name is unknown; and our own country to lady Wortley Montague for its introduction into this part of Europe. By inserting the variolous contagion into the arm, it is not received by the tonsils, as generally happens, I suppose, in the natural small-pox; whence there is no dangerous swelling of the throat, and as the pustules are
generally

generally few and distinct, there is seldom any secondary fever; whence those two sources of danger are precluded; hence when the throat in inoculated small-pox is much inflamed and swelled, there is reason to believe, that the disease had been previously taken by the tonsils in the natural way: which also, I suppose, has generally happened, where the confluent kind of small-pox has occurred on inoculation.

I have known two instances, and have heard of others, where the natural small-pox began fourteen days after the contagion had been received; one of these instances was of a countryman, who went to a market-town many miles from his home, where he saw a person in the small-pox, and on returning the fever commenced that day fortnight: the other was of a child, whom the ignorant mother carried to another child ill of the small-pox, on purpose to communicate the disease to it; and the variolous fever began on the fourteenth day from that time. So that in both these cases fever commenced in half a lunation after the contagion was received. In the inoculated small-pox the fever generally commences on the seventh day, or after a quarter of a lunation; and on this circumstance probably depends the greater mildness of the latter. The reason of which is difficult to comprehend; but supposing the facts to be generally as above related, the slower progress of the contagion indicates a greater irritability of the system, and in

consequence a tendency to malignant rather than to inflammatory fever. This difference of the time between the reception of the infection and the fever in the natural and artificial small-pox may nevertheless depend on its being inserted into a different series of vessels; or to some unknown effect of lunar periods. It is a subject of great curiosity, and deserves further investigation.

When the inoculated small-pox is given under all the most favourable circumstances, I believe less than one in a thousand miscarry, which may be ascribed to some unavoidable accident, such as the patient having previously received the infection, or being about to be ill of some other disease. Those which have lately miscarried under inoculation, as far as has come to my knowledge, have been chiefly children at the breast; for in these the habit of living in the air has been confirmed by so short a time, that it is much easier destroyed, than when these habits of life have been established by more frequent repetition. See Sect. XVII. 3. Thus it appears from the bills of mortality kept in the great cities of London, Paris, and Vienna, that out of every thousand children above three hundred and fifty die under two years old. (Kirkpatrick on Inoculation.) Whence a strong reason against our hazarding inoculation before that age is passed, especially in crowded towns; except where the vicinity of the natural contagion renders it necessary, or the convenience of inoculating

oculating a whole family at a time; as it then becomes better to venture the less favourable circumstances of the age of the patient, or the chance of the pain from tootling, than to risk the infection in the natural way.

The most favourable method consists in, first, for a week before inoculation, restraining the patients from all kinds of fermented or spirituous liquor, and from animal food; and by giving them from one grain to three or four of calomel every other day for three times. But if the patients be in any the least danger of taking the natural infection, the inoculation had better be immediately performed, and this abstinence then begun; and two or three gentle purges with calomel should be given, one immediately, and on alternate days. These cathartics should not induce more than two or three stools. I have seen two instances of a confluent small-pox in inoculation following a violent purging induced by too large a dose of calomel.

Secondly, the matter used for inoculation should be in a small quantity, and warm, and fluid. Hence it is best when it can be recently taken from a patient in the disease; or otherwise it may be diluted with part of a drop of warm water, since its fluidity is likely to occasion its immediate absorption; and the wound should be made as small and superficial as possible, as otherwise ulcers have been supposed sometimes to ensue with subaxillary abscesses. Add

to this, that the making two punctures either on the same or one on each arm, secures the success of the operation in respect to communicating the infection.

Thirdly, at the time of the fever or eruption, the application of cool air to those parts of the skin which are too warm, or appear red, or are covered with what is termed a rash, should be used freely, as well as during the whole disease. And at the same time, if the feet or hands are colder than natural, these should be covered with flannel. See Class IV. 2. 2. 10.

Where the matter used is not procured quite fresh, the manner of preserving it should be nicely attended to: as I have been informed that a surgeon procured some matter in a fluid state, about a tea-spoonful, which had been kept some time in a quill, and afterwards in a small phial, which he carried sixteen hours in his breeches-pocket; with this he inoculated many children, most of whom had not the small-pox in consequence, but were affected with typhus, one of whom died. Whence it appears, that the variolous matter had undergone by putrefaction a decomposition, and that another kind of contagious material had been produced; which agrees with the ingenious observations of Dr. Jenner, in his treatises on the variolæ vaccinæ, or cow-pox; and of Mr. Kite, related in the Memoirs of the Medical Society of London, Vol. IV.

May

May not the confluent small-pox proceed from the contagious matter having undergone a partial putrefaction, so as to contain both the variolous and the typhus contagion? and that, whether the disease be taken naturally or by inoculation? and that hence the confluent kind consists of the small-pox, with the fever commonly termed putrid? and that, lastly, as Dr. Jenner observes, where the small-pox has been said to recede, or not to rise, the disease has been simply a malignant or typhus fever, *febris sensitiva inirritata*, mistaken for the small-pox?

Variola vaccina. Cow-pox. Cows are liable to an eruption on their paps or udders, in some counties, as in Gloucestershire; which was occasionally communicated to the hands or arms of those who milked them, producing an ulcer, and some degree of fever: and it had been long observed by the people of those counties, that those who had undergone this disease, which was called the cow-pox, were not liable to the small-pox.

Dr. Jenner, an eminent physician in Gloucestershire, fortunately attended to this disease, found it to be much milder than the small-pox, and that the fact was true, that it secured those who had been infected with it from afterwards being liable to the variolous infection. He also observed, that the vaccine-pox is not infectious, but by careful inoculation; and that, on this account, it might

be inoculated in a family, without endangering others. A circumstance of great consequence to the public, as the inoculation of the small-pox is known frequently to propagate that disease; and also to private families, when there happens to be a pregnant woman in them, who has not had the small-pox; to all of whom in that situation it is dangerous, as it generally produces miscarriage, and frequently death. Dr. Cappe, in an ingenious paper in the York Herald, observes, that the vaccine disease is never communicated but by contact, and then only when the matter lies on the broken skin; and that many women during pregnancy have passed through this disease, and none have suffered from it; and that instead of being peculiarly dangerous to young infants, as the small-pox is, it seems to be peculiarly mild to them.

From all these circumstances it may be hoped, that the inoculation of the cow-pox may become so general, and performed so early in life, as totally to eradicate the small-pox; by which latter disease above two thousand persons are shewn by Dr. Cappe, by the bills of mortality, to be annually destroyed in a part of London only.

As the cow-pox is so much less infectious than the small-pox, it requires much more care in the inoculation to give the disease with certainty; whence it sometimes has happened, that a slight inflammation from the puncture of the lancet has been mistaken by the unskilful for the vaccine disease:

ease: and I have heard of four such patients in this country, who have afterward taken the small-pox. But as Dr. Woodville inoculated a thousand people with the small-pox, who had previously received the cow-pox, without one of them taking the infection, there can be no doubt but that the four patients above mentioned had not previously undergone the vaccine disease; and ought not therefore to discredit this fortunate and wonderful discovery.

In the counties where the cows are subject to this disease, the milking is performed principally by men-servants; and it is there believed, as Dr. Jenner mentions, that the disease was previously given to the paps of the cows by the hands of the men who milked them, and who had previously acquired the infectious matter from the heels of horses, which discharged an acrid sanies, when they had a disease called the grease. This may be worth further investigation; as the preservation of people from the small-pox, by their having undergone the cow-pox, is so wonderful a phenomenon, so contrary to our previous knowledge of any analogy between the infectious diseases of men and quadrupeds, that other facts equally surprising may exist. May not the small-pox have been originally acquired from the cow-pox? which latter, having been a much older disease, may by process of time have become milder than the former: as the small-pox is believed also to have become much milder than formerly; owing probably to the incapacity of

receiving it, which exists in those who have undergone that disease, having in process of time become hereditary. Which incapacity of receiving a second time the small-pox may be explained from the general law of animation, that stimuli greater than natural lose their effect by habit, or from their being too violently or too frequently applied.

As the cow-pox is said to be so favourable to infants, great benefit might accrue to mankind by their early inoculation, which might in time exterminate the small-pox. This might be perhaps effected by establishing a dispensary in towns, and even villages, and allowing a premium of a few shillings to every one of the poor who should be thus inoculated, as well as their daily sustenance for eight or ten days, that their arms might be inspected by a surgeon, to ascertain that they underwent the genuine disease.

10, *Rubeola irritata, morbilli*. The measles commence with sneezing, red eyes, dry hoarse cough, and are attended with sensitive irritated fever. On the fourth day, or a little later, small thick eruptions appear, scarcely eminent above the skin, and, after three days, changing into very small branny scales.

As the contagious material of the small-pox may be supposed to be diffused in the air like a fine dry powder, and mixing with the saliva in the mouth to infect the tonsils in its passage to the stomach;
so

So the contagious material of the measles may be supposed to be more completely dissolved in the air, and thus to impart its poison to the membrane of the nostrils, which covers the sense of smell; whence a catarrh with sneezing ushers in the fever; the termination of the nasal duct of the lacrymal sac is subject to the same stimulus and inflammation, and affects by sympathy the lacrymal glands, occasioning a great flow of tears. See Sect. XVI. 8. And the redness of the eye and eyelids is produced in consequence of the tears being in so great quantity, that the saline part of them is not entirely reabsorbed. See Sect. XXIV. 2. 8.

The contagion of the measles, if it be taken a sufficient time before inoculation, so that the eruption may commence before the variolous fever comes on, stops the progress of the small-pox in the inoculated wound, and delays it till the measles-fever has finished its career. See Sect. XXXIII. 2. 9.

The measles are usually attended with inflammatory fever with strong pulse, and bear the lancet in every stage of the disease. In the early periods of it, venesection renders the fever and cough less; and, if any symptoms of peripneumony occur, is repeatedly necessary; and at the decline of the disease, if a cough be left after the eruption has ceased, and the subsequent branny scales are falling off, venesection should be immediately used; which prevents the danger of consumption. At this time
also

also change of air is of material consequence, and often removes the cough like a charm, as mentioned in a similar situation at the end of the chin-cough.

Rubeola inirritata. Measles with inirritated fever, or with weak pulse, has been spoken of by some writers. See London Med. Observ. Vol. IV. Art. XI. It has also been said to have been attended with sore throat. Edinb. Essays, Vol. V. Art. II. Could the scarlet fever have been mistaken for the measles? or might one of them have succeeded the other, as in the measles and small-pox mentioned in Sect. XXXIII. 2. 9.?

From what has been said, it is probable that inoculation might disarm the measles as much as the small-pox, by preventing the catarrh, and frequent pulmonary inflammation, which attends this disease; both of which are probably the consequence of the immediate application of the contagious miasmata to these membranes. Some attempts have been made, but a difficulty seems to arise in giving the disease; the blood, I conjecture, would not infect, nor the tears; perhaps the mucous discharge from the nostrils might succeed; or a drop of warm water put on the eruptions, and scraped off again with the edge of a lancet; or if the branny scales were collected, and moistened with a little warm water? Further experiments on this subject would be worthy the public attention.

II. *Scarlatina mitis*. The scarlet fever exists with all degrees of virulence, from a flea-bite to the plague. The infectious material of this disease, like that of the small-pox, I suppose to be diffused, not dissolved, in the air; on which account I suspect that it requires a much nearer approach to the sick for a well person to receive the infection, than in the measles; the contagion of which I believe to be more volatile, or diffusible, in the atmosphere. But as the contagious miasmata of small-pox and scarlet fever are supposed to be more fixed, they may remain for a longer time in clothes or furniture; as a thread dipped in variolous matter has given the disease by inoculation after having been exposed many days to the air, and after having been kept many months in a phial. This also accounts for the slow or sporadic progress of the scarlet fever, as it infects others at but a very small distance from the sick; and does not produce a quantity of pus-like matter, like the small-pox, which can adhere to the clothes of the attendants, and when dried is liable to be shaken off in the form of powder, and thus propagate the infection.

This contagious powder of the small-pox, and of the scarlet fever, becomes mixed with saliva in the mouth, and is thus carried to the tonsils, the mucus of which arrests some particles of this deleterious material; while other parts of it are carried into the stomach, and are probably decom-

posed by the power of digestion; as seems to happen to the venom of the viper, when taken into the stomach. Our perception of bad tastes in our mouths, at the same time that we perceive disagreeable odours to our nostrils, when we inhale very bad air, occasions us to spit out our saliva; and thus, in some instances, to preserve ourselves from infection. This has been supposed to originate from the sympathy between the organs of taste and smell; but any one who goes into a sick-room close shut up, or into a crowded assembly-room, or tea-room, which is not sufficiently ventilated, may easily mix the bad air with the saliva on his tongue so as to taste it; as I have myself frequently attended to.

Hence it appears that these heavy infectious matters are more liable to mix with the saliva, and inflame the tonsils, and that either before or at the commencement of the fever; and this is what generally happens in the scarlet fever, always I suppose in the malignant kind, and very frequently in the mild kind. But as this infection may be taken by other means, as by the skin, it also happens in the most mild kind, that there is no inflammation of the tonsils at all; in the same manner as there is generally no inflammation of the tonsils in the inoculated small-pox.

In the mild scarlatina on the fourth day of the fever the face swells a little, at the same time a florid redness appears on various parts of the skin
in

in large blotches, at length coalescing, and after three days changing into branny scales.

M. M. Cool air. Fruit. Lemonade. Milk and water.

Scarlatina maligna. The malignant scarlet fever begins with inflamed tonsils; which are succeeded by dark drab-coloured sloughs from three to five lines in diameter, flat, or beneath the surrounding surface; and which conceal beneath them spreading gangrenous ulcers. The swellings of the tonsils are sensible to the eye and touch externally, and have an elastic rather than an œdematous feel, like parts in the vicinity of gangrenes. The pulse is very quick and weak, with delirium, and the patient generally dies in a few days; or if he recovers, it is by slow degrees, and attended with anasarca.

M. M. A vomit once. Wine. Beer. Cyder. Opium. Bark, in small repeated doses. Small successive blisters, if the extremities are cooler than natural. Cool air on the hot parts of the skin, the cool extremities being at the same time covered. Iced lemonade. Broth. Custards. Milk. Jellies. Bread pudding. Chicken. Touch the ulcers with a dry sponge to absorb the contagious matter, and then with a sponge filled with vinegar, with or without sugar of lead dissolved in it, about six grains to an ounce; or with a very little blue vitriol dissolved in it, as a grain to an ounce; but nothing so instantaneously corrects the putrid smell of

of ulcers as a solution of alum, about half an ounce to a pint of water, which should be a little warmish, and injected into the fauces gently by means of a syringe. These should be repeated frequently in a day, if it can be done easily, and without fatigue to the child. A little powder of bark taken frequently into the mouth, as a grain or two, that it may mix with the saliva, and thus frequently stimulate the dying tonsils. Could a warm bath made of decoction of bark, or a cold alluviation with it, be of service? Could oxygene gas mixed with common air stimulate the languid system? Small electric shocks through the tonsils every hour? ether frequently applied externally to the swelled tonsils?

As this disease is attended with the greatest degree of debility, and as stimulant medicines, if given in quantity, so as to produce more than natural warmth, contribute to expend the already too much exhausted sensorial power; it appears, that there is nothing so necessary to be nicely attended to as to prevent any unnecessary motions of the system; this is best accomplished by the application of cold to those parts of the skin, which are in the least too hot. Dr. Mosman, of Bradford, directed a boy of eight years of age, who was very hot, and covered with the scarlet eruption, to be taken naked out of bed, and moistened his skin all over with cold vinegar, by means of a sponge, with great and good event. It is probable that cold vinegar might diminish the inflammation

inflammation and consequent heat of the skin more effectually than cold water, as its application to the lips renders them pale, probably by stimulating the absorbent extremities of the veins into greater action. *Annals of Medicine*, Vol. IV. 1799. Secondly, that the exhibition of the bark in such quantity as not to oppress the stomach and injure digestion, is next to be attended to, as not being liable to increase the actions of the system beyond their natural quantity; and that opium and wine should be given with the greatest caution, in very small repeated quantity, and so managed as to prevent, if possible, the cold fits of fever; which probably occur twice in 25 hours, obeying the lunations like the tides, as mentioned in Sect. XXXII. 6. that is, I suppose, the cold periods, and consequent exacerbations of fever, in this malignant scarlatina, occur twice in a lunar day; which is about ten minutes less than 25 hours; so that if the commencement of one cold fit be marked, the commencement of the next may be expected (if not disturbed by the exhibition of wine, or opium, or the application of blisters) to occur in about twelve hours and a half from the commencement of the former; or if not prevented by large doses of the bark.

No one could do an act more beneficial to society, or glorious to himself, than by teaching mankind how to inoculate this fatal disease; and thus to deprive it of its malignity. Matter might be
taken

taken from the ulcers in the throat, which would probably convey the contagion; or warm water might be put on the eruption, and scraped off again by the edge of a lancet. These experiments could be attended with no danger, and should be tried for the public benefit, and the honour of medical science.

Dr. Harwood, professor of anatomy, at Cambridge, favoured me with the following curious case of this infection: Mr. N—— had a violent delirium in the scarlet fever, with the skin cracked in many places, exuding an ichorous matter; he was attended by a poor man who had recently cut his hand with a glass bottle, and in the struggle of confining him to bed his wounded hand was frequently applied to the patient's body. This happened on the Friday night; his hand was inflamed and the arm swelled the next day; on the Monday following he was seized with the same fever, and died on the Wednesday morning after. This would seem to shew, as far as a single case can be relied on, that the scarlet fever may be communicated, like the small-pox, by inoculation, and probably with similar success, if the matter be diluted with warm water, used in small quantity, and by superficial incisions only, through the cuticle.

12. *Miliaria*. Miliary fever. An eruption produced by the warmth, and more particularly, by the stimulus, of the points of the wool in flannel

nel or blankets applied to the skin, has been frequently observed; which, by cool dress, and bed-clothes without flannel, has soon ceased. See Class I. 1. 2. 3. This, which may be called *miliaria sudatoria*, has been confounded with other miliary fevers, and has made the existence of the latter doubted. Two kinds of eruptions I have seen formerly attended with fever, but did not sufficiently mark their progress, which I conceived to be miliary eruptions, one with arterial strength, or with sensitive irritated fever, and the other with arterial debility, or with sensitive inirritated fever.

In the former of these, or *miliaria irritata*, the eruptions were distinct and larger than the small-pox, and the fever was not subdued without two or three venesections, and repeated cathartics with calomel.

The latter, or *miliaria inirritata*, was attended with great arterial debility; and during the course of the fever pellucid points appeared within the skin, particularly on the soft parts of the fingers. And, in one patient, whom I esteemed near her end, I well recollect to have observed round pellucid globules, like what are often seen on vines in hot-houses, no larger than the smallest pins' heads, adhere to her neck and bosom; which were hard to the touch, but were easily rubbed off. These diseases, if they are allied, do not differ more than the kinds of small pox; but require many further observations.

The eruption so often seen on children in the cradle, and called by the nurses red-gum, and which is attended with some degree of fever, I suspect to be produced by too great warmth, and the contact of flannel next their tender skins, like the miliaria sudatoria; and like that requires cool air, cool clothes, and linen next their skin.

13. *Pestis*. The plague, like other diseases of this class, seems to be sometimes mild, and sometimes malignant; according to the testimony of different writers. It is said to be attended with inflammation, with the greatest arterial debility, and to be very contagious, attended at an uncertain time of the fever with buboes and carbuncles. Some authors affirm, that the contagion of the plague may be repeatedly received, so as to produce the disease; but as this is contrary to the general analogy of all contagious diseases, which are attended with fever, and which cure themselves spontaneously; there is reason to suspect, that where it has been supposed to have been repeatedly received, some other fever with arterial debility has been mistaken for it, as has probably universally been the case, when the small-pox has been said to have been twice experienced.

M. M. Venesection has been recommended by some writers on the first day, where the inflammation was supposed to be attended with sufficient arterial strength, which might perhaps sometimes happen,

happen, as the bubo seems to be a suppuration; but the carbuncle, or anthrax, is a gangrene of the part, and shews the greatest debility of circulation. Whence all the means before enumerated in this genus of diseases to support the powers of life are to be administered. Currents of cold air, cold water, ice, externally on the hot parts of the skin.

The methods of preventing the spreading of this disease have been much canvassed, and seem to consist in preventing all congregations of the people, as in churches, or play-houses; and to remove the sick into tents, on some airy common, by the side of a river, and supply them with fresh food, both animal and vegetable; with beer and wine, in proper quantities; and to encourage those who can, daily to wash both their clothes and themselves.

The *pestis vaccina*, or disease amongst the cows, which afflicted this island about half a century ago, seems to have been a contagious fever, with great arterial debility; as in some of them, in the latter stage of the disease, an emphysema could often be felt in some parts, which evinced a considerable progress of gangrene beneath the skin. In the sensitive inirritated fevers of these animals, I suppose about sixty grains of opium, with two ounces of extract of oak-bark, every six hours, would supply them with an efficacious medicine; to which might be added thirty grains of vitriol of iron, if any tendency to bloody urine should ap-

pear, to which this animal is liable. The method of preventing the infection from spreading, if it should ever again gain access to this island, would be immediately to obtain an order from government to prevent any cattle from being removed, which were found within five miles of the place supposed to be infected, for a few days; till the certainty of the existence of the pestilence could be ascertained, by a committee of medical people. As soon as this was ascertained, all the cattle within five miles of the place should be immediately slaughtered, and consumed within the circumscribed district; and their hides put into lime-water before proper inspectors.

14. *Pemphigus* is a contagious disease, attended with bladdery eruptions, appearing on the second or third day, as large as filberts, which remain many days, and then effuse a thin ichor. It seems to be either of a mild kind, with sensitive fever only, of which I have seen two instances; or with irritated, or with inirritated fever; as appears from the observations of M. Salabert. See Medical Comment. by Dr. Duncan, Decad. II. Vol. VI.

15. *Varicella*. Chicken-pox is accompanied with sensitive fever, pustules break out after a mild fever, like the small-pox, seldom suppurate, and generally terminate in scales without scars. I once saw a lady who miscarried during this disease,
6 though

though all her children had it as slightly as usual. It sometimes leaves scars or marks on the skin. This disease has been mistaken for the small-pox, and inoculated for it; and then the small-pox has been supposed to happen twice to the same person. See Transf. of the College, London. It is probable that the pemphigus and urticaria, as well as this disease, have formerly been diseases of more danger; which the habit of innumerable generations may have rendered mild, and will in process of time annihilate. In the same manner as the small-pox, venereal disease, and rickets, seem to become milder or less in quantity every half century. While, at the same time, it is not improbable, that other new diseases may arise, and, for a season, thin mankind!

16. *Urticaria*. Nettle-rash begins with mild sensitive fever, which is sometimes scarcely perceptible. Hence this eruption has been thought of two sorts, one with and the other without fever. On the second day red spots, like parts stung with nettles, are seen; which almost vanish during the day, and recur in the evening with the fever, succeeded in a few days by very minute scales. See Transf. of the College, London.

17. *Aphtha*. Thrush. It has been doubted, whether aphtha or thrush, which consists of ulcers in the mouth, should be enumerated amongst fe-

brile diseases; and whether these ulcers are always symptomatic, or the consequence rather than the cause of the fevers which attend them. The tongue becomes rather swelled; its colour and that of the fauces purplish; sloughs or ulcers appear first on the throat and edges of the tongue, and at length over the whole mouth. These sloughs are whitish, sometimes distinct, often coalescing, and remain an uncertain time. Cullen. I shall concisely mention four cases of aphtha, but do not pretend to determine whether they were all of them symptomatic or original diseases.

Aphtha sensitiva. A lady during pregnancy was frequently seized with ulcers on her tongue and cheeks, or other parts of the mouth, without much apparent fever; which continued two or three weeks, and returned almost every month. The thrush in the mouths of young children seems to be a similar disease. These ulcers resemble those produced in the sea-scurvy, and have probably for their cause an increased action of the secreting system from increased sensation, with a decreased action of the absorbent system from decreased irritation. See Class I. 2. 1. 14.

M. M. Solutions of alum, of blue vitriol. Powder of bark taken frequently into the mouth in very small quantity. See Class II. 1. 3. 1.

Aphtha irritata. Inflammatory aphtha. A case of this kind is related under the title of suppurative rheumatism. Class IV. 2. 1. 16.

Aphtha

Aphtha inirritata. Sloughs or ulcers of the mouth, attended with sensitive fever with great arterial debility. They seem to spread downwards from the throat into the stomach, and probably through the whole intestinal canal, beginning their course with cardialgia, and terminating it with tenesmus; and might perhaps be called an erysipelas of this mucous membrane.

M. M. Cool air. A small blister on the back. Bark. Wine. Opium in small repeated quantities. Soap neutralizes the gastric acid without effervescence, and thus relieves the pain of cardialgia, where the stomach is affected. Milk also destroys a part of this acid. Infusion of sage-leaves two ounces, almond-soap from five grains to ten, with sugar and cream, is generally both agreeable and useful to these patients. See I. 2. 4. 5.

Where the stomach may be supposed to be excoriated by poisons containing acid, as sublimate of mercury or arsenic; or if it be otherwise inflamed, or very sensible to the stimulus of the gastric acid; or where it abounds with acid of any kind, as in cardialgia; the exhibition of soap is perhaps a preferable manner of giving alkali than any other, as it decomposes in the stomach without effervescence; while the caustic alkali is too acrid to be administered in such cases, and the mild alkali produces carbonic gas. If a drop of acid of vitriol be put on cap-paper, it will be long before it destroys the paper; but if a drop of mild alkali

be added, a sudden effervescence arises, and the paper is instantly destroyed by the escape of the fixed air; in the same manner as lumps of solid lime are broken into powder by the escape of the steam produced from the water, which is poured on them. This shews why a succession of acid and of alkaline caustics sooner destroys a part, than either of them applied separately.

18. *Dysenteria*. Bloody-flux is attended with sensitive fever, generally with arterial debility; with frequent mucous or bloody stools, which contain contagious matter produced by the membranes of the intestines; the alimentary excrement being, nevertheless, retained; with griping pains, and tenesmus.

Linneus observed microscopic animals in the stools of dysenteric patients, and concluded from thence that they were the cause of the disease; in the same manner the animalcula, seen by microscopes, in the pustules of the itch, have been supposed to be the cause of those eruptions. See Article IV. 2. 1. 3. These animalcula are nevertheless seen in almost all animal fluids which have for a time stagnated; as in the semen, and in all liquid evacuations from the intestines, as asserted by Buffon; who esteems them to be organized beings, though not perfect animals, in his ingenious treatise on generation. *Histoire Naturel.*

M. M. Emetics. Antimonials, Peruvian bark,

bark. Opium and calomel, of each a grain every night. Bolus armeniacæ. Earth of alum. Chalk. Calcined hartshorn. Mucilage. Bee's wax mixed with yolk of egg. Cerated glass of antimony. Warm bath. Flannel clothing next to the skin. Large clysters with opium. With ipecacuanha, with smoke of tobacco? Two dysenteric patients in the same ward, of the infirmary at Edinburgh, quarrelled, and whipped each other with horsewhips a long time, and were both much better after it, owing perhaps to the exertion of so much of the sensorial power of volition; which, like real insanity, added excitement to the whole system.

The prevention of this contagion must consist principally in ventilation and cleanliness; hence the patients should be removed into cottages distant from each other, or into tents; and their fæces buried as soon as may be; or conveyed into a running stream; and themselves should be washed with cold or warm water after every evacuation. For the contagious matter consists in the mucous or purulent discharge from the membrane which lines the intestines; and not from the febrile perspiration, or breath of the patients. For the fever is only the consequence and not the cause of contagion; as appears from Genus the Fifth of this Order, where contagion exists without fever.

19. *Gastritis superficialis.* Superficial inflammation

mation of the stomach. An erysipelatous inflammation of the stomach is mentioned by Dr. Cullen from his own observations; which is distinguished from the inflammatory gastritis by less pain and fever, and by an erysipelatous redness about the fauces. Does this disease belong to aphtha?

20. *Enteritis superficialis*. Superficial inflammation of the bowels is also mentioned by Dr. Cullen, from his own observation, under the name of enteritis erythematica; and is said to be attended with less pain and fever, without vomiting, and with diarrhœa. May not this disease be referred to aphtha, or to dysentery?

ORDO I.

Increased Sensation.

GENUS IV.

With the Production of new Vessels by internal Membranes or Glands, without Fever.

WHERE inflammation is produced in a small part, which has not great natural sensibility, the additional sensation does not produce an increased action of the arterial system; that is, the associated motions which are employed in the circulation of the blood (those for instance of the heart, arteries, glands, capillaries, and their correspondent veins), are not thrown into increased action by so small an addition of the sensorial power of sensation. But when parts which naturally possess more sensibility become inflamed, the quantity of the sensorial power of sensation becomes so much increased, as to affect the associated motions belonging to the circulation, occasioning them to proceed with greater frequency; that is, a fever is induced. This is well exemplified in the internal and superficial paronychia; one of which is attended with great pain and fever, and the other with little pain and no fever. See Class II. 1. 2. 19. and II. 1. 4. 5.

From

From hence it appears, that the sensitive fever is an accidental consequence of the topical phlegmon, or inflammation, and not a cause of it; that it is often injurious, but never salutary; and should therefore always be extinguished, as soon as may be, either by the lancet and cathartics, and diluents, and cold air, when it is of the irritated kind; or by the bark, opium, cool air, and nutrientia, when it is of the inirritated kind.

SPECIES.

1. *Ophthalmia superficialis*. As the membranes, which cover the eye, are excluded from the air about one-third part of the twenty-four hours, and are moistened by perpetual nictitation during the other sixteen, they may be considered as internal membranes; and, from the analogy of their inflammation to that of other internal membranes, it is arranged under this genus; whilst the tonsillitis is esteemed an inflammation of an external membrane, because currents of air are perpetually passing both day and night over the fauces.

The superficial ophthalmia has generally been esteemed a symptom of scrofula, when it recurs frequently in young persons; but is probably only a concomitant of that disease, as a symptom of general debility; ramifications of new red vessels, and of enlarged old ones, are spread over the white part of the eye; and it is attended with less heat,
less

less pain, and less intolerance of light than the ophthalmia interna, described in Class II. 1. 2. 2. It occurs in those of feeble circulation, especially children of a scrofulous tendency, and seems to arise from a previous torpor of the vessels of the tunica albuginea from their being exposed to cold air; and from this torpor being more liable to occur in habits, which are naturally inirritable; and therefore more readily fall into quiescence by a smaller deduction of the stimulus of heat, than would affect stronger or more irritable habits; the consequence of this torpor is increased action, which produces pain in the eye, and that induces inflammation by the acquisition of the additional sensorial power of sensation.

Ophthalmia lymphatica is a kind of anasarca of the tunica adnata; in this the vessels over the sclerótica, or white part of the eye, rise considerably above the cornea, which they surround, are less red than in the ophthalmia superficialis, and appear to be swelled by an accumulation of lymph rather than of blood; it is probably owing to the temporary obstruction of a branch of the lymphatic system.

M. M. If the pain be great, venesection by leeches on the temple, or cutting the temporal artery, and one purge with three or four grains of calomel should be premised. Then the Peruvian bark twice a day. Opium from a quarter to half a grain twice a day, for some weeks. Bathe the
eye

eye frequently with cold water alone, or with cold water to a pint of which is added half an ounce of salt. White vitriol, six grains dissolved in one ounce of water; a drop or two to be put between the eyelids twice a day. Take very small electric sparks from the eyes every day for a fortnight. Bathe the whole head with salt and water made warm, every night, for some months. Send such children to a school near the sea, for the convenience of sea-bathing, for many months, annually; such schools are to be found in or near Liverpool.

When a child is afflicted with an inflamed eye of this kind, he should always sit with his back to the window or candle; but it is generally not necessary to cover it, or if the uneasy sensation of light makes this proper, the cover should stand off from the eye, so as not much to exclude the cool air from it. As covering an eye unnecessarily is liable to make that eye weaker than the other, from its not being sufficiently used, and thence to produce a squinting for ever afterwards.

Nevertheless, when the pain is great, a poultice must be applied to keep the eyes moist, or a piece of oiled silk bound lightly over them. Or thus, boil an egg till it is hard, cut it longitudinally into two hemispheres, take out the yolk, sew the backs of the two hollow hemispheres of the white to a ribbon, and bind them over the eyes every night on going to bed; which, if nicely fitted on, will
keep

keep the eyes moist without any disagreeable pressure. See Class I. 1. 3. 14.

Ophthalmia equina. An inflammation of this kind is liable to affect the eyes of horses; one cause of which is owing to a silly custom of cutting the hair out of horses' ears; by which they are not only liable to take cold at the ear, but grass-seeds are liable to fall into their ears from the high racks in stables; and in both cases the eye becomes inflamed by sympathy. I once directed the temporal artery of a horse to be opened, who had frequent returns of an inflamed eye; and I believed it was of essential service to him; it is probable that the artery was afterwards contracted in the wounded part, and that thence less blood was derived to the eye: the hæmorrhage was stopped by two persons alternately keeping their fingers on the orifice, and afterwards by a long bandage of broad tape.

2. *Pterigion.* Eye-wing. A spot of inflammation sometimes begins on the inside of the lower eyelid, or on the tunica albuginea, and spreads an intertexture of red vessels from it, as from a centre, which extend on the white part of the eye, and have the appearance of the wing of a fly, from whence its name.

M. M. Cut the ramifications of vessels again and again, with the point of a lancet, close to the centre of inflammation. Touch them repeatedly
with

with lunar caustic. See Home on the urethra. Page 101.

Mr. Hadley of Derby procured an ingenious instrument to be made to cut the vessels, which had spread their numerous branches over an opaque cornea, after a violent inflammation; by which they were repeatedly divided, with little pain to the patient, as there was no necessity to hold them by a forceps. The instrument was in the form of a corn-fickle, or the early crescent of the new moon, about an inch in length, the inner edge of the curve was sharp, and the point fine; the back was rounded and smooth, and the other end fixed in an ivory handle. The point of this was suddenly introduced under the branches of the new vessels, which were thus cut upwards, and there was no occasion to hold the eye, or the trunks of the vessels.

3. *Tarfitis palpebrarum*. Inflammation of the edges of the eyelids. This is a disease of the glands, which produce the hairs of the eyelashes, and is frequently the cause of their falling off. After this inflammation a hard scar-like ridge is left on the edge of the eyelid, which scratches and inflames the eyeball, and becomes a very troublesome disease.

The Turkish ladies are said to colour the edge of the eyelash with crude antimony in very fine powder, which not only gives lustre to the eye,
as

as a diamond set on a black foil, but may prevent extraneous light from being reflected from these edges into the eye, and thus serve the purpose of the black feathers about the eyes of swans, described in Sect. XXXIX. 5. 1. and may also prevent the edges of the eyelids from being inflamed by the frequent stimulus of tears on them. Black lead in fine powder might be better for all these purposes than antimony, and might be put on with a camel's hair brush.

M. M. Mercurial ointment smeared at night on the edges of the eyelids. Burnt alum sixty grains, hog's grease half an ounce, well rubbed into an ointment to be smeared on them in the night. Cold water frequently in the day. See Class II. I. 1. 8.

4. *Hordeolum*. Styte. This inflammation begins either on or near the edges of the eyelids, or in the loose skin of them, and is sometimes very slow either in coming to suppuration or in dispersing. The skin beneath the lower eyelid is the most frequent seat of this tumor, which sometimes never suppurates at all, but becomes an encysted tumor: for as this skin is very loose for the purpose of admitting great motion to the eyelid, the absorbent power of the veins seems particularly weak in this part; whence when any person is weakened by fatigue or otherwise, a darker shade of colour is seen beneath the eyes; which is owing to a less

energetic action of the absorbent terminations of the veins, whence the currents of dark or venous blood are delayed in them. This dark shade beneath the eyes, when it is permanent, is a symptom of habitual debility, or inirritability of the circulating system. See Class I. 2. 2. 2.

M. M. Smear the tumors with mercurial ointment, moisten them frequently with ether. To promote their suppuration they may be wounded with a lancet, or slit down the middle, or they may be cut out. A caustic leaves a large scar.

5. *Paronychia superficialis*. Whitlow. An inflammation about the roots of the nail beneath the skin, which suppurates without fever, and sometimes destroys the nail; which is, however, gradually reproduced. This kind of abscess, though not itself dangerous, has given opportunity for the inoculation of venereal matter in the hands of accoucheurs, and of putrid matter from the dissection of diseased bodies; and has thus been the cause of disease and death. When putrid matter has been thus absorbed from a dead body, a livid line from the finger to the swelled gland in the axilla is said to be visible; which shews the inflammation of the absorbent vessel along its whole course to the lymphatic gland; and death has generally been the consequence.

M. M. In the common paronychia a poultice is generally sufficient. In the absorption of putrid

matter

matter rub the whole hand and arm with mercurial ointment three or four times a day, or perpetually. Could the swelled axillary gland be expected? In the absorption of venereal matter the usual methods of cure in syphilis must be administered, as in Class II. 1. 5. 1.

6. *Gutta rosea*. The rosy drop on the face is of three kinds. First, the *gutta rosea hepatica*, or the red pimples on the faces of drunkards, which are probably a kind of crisis, or vicarious inflammation, which succeeds, or prevents, a torpor of the membranes of the liver. This and the succeeding species properly belong to Class IV. 1. 2. 14.

Secondly, the pimpled face, in consequence of drinking cold water, or eating cold turnips, or other insipid food, when much heated with exercise; which probably arises from the sympathy between the skin of the face and the stomach; and may be called the *gutta rosea stomatica*. Which is distinguished from the former by the habits of the patient in respect to drinking; by the colour of the eruptions being less deep; and by the patient continuing generally to be troubled with some degree of aephsia. See Class I. 3. 1. 3. I knew a lady who had long been afflicted with pain about the region of the stomach; and, on drinking half a pint of vinegar, as a medicine, she had a breaking out commenced on her face; which remained, and she became free from the pain about the

stomach. Was this a stomatic, or an hepatic disease?

Thirdly, there is a red face, which consists of smaller pimples than those above mentioned; and which is less liable to suppurate; and which seems to be hereditary, or at least has no apparent cause like those above mentioned; which may be termed *gutta rosea hereditaria*, or *puncta rosea*.

Mrs. S. had a pimpled face, which I believe arose from potation of ale. She applied alum in a poultice to it, and had soon a paralytic stroke, which disabled her on one side, and terminated in her death.

Mrs. L. had a red pimpled face, which seemed to have been derived from her mother, who had probably acquired it by vinous potation; she applied a quack remedy to it, which I believe was a solution of lead, and was seized with epileptic fits, which terminated in palsy, and destroyed her. This shews the danger of using white paint on the face, which is called bismuth, but is in reality white lead or cerussa; and if it be bismuth, it may be equally deleterious.

Mr. Y—— had acquired the *gutta rosea* on his nose, and applied a saturnine solution on it for a few nights, and was then seized with paralysis on one side of his face; which however he gradually recovered, and has since acquired the *gutta rosea* on other parts of his face.

These fatal effects were probably caused by the disagreeable

disagreeable sensation of an inflamed liver, which used before to be relieved by the sympathetic action and consequent inflammation of the skin of the face, which was now prevented by the stronger stimulus of the application of calx of lead. The manner in which disagreeable sensations induce epilepsy and palsy is treated of in Class III. In some cases where habitual discharges, or eruptions, or ulcers, are stopped, a torpor of the system may follow, owing to the want of the accustomed quantity of sensation or irritation. See Class I. 1. 2. 9. and II. 1. 5. 6. In both these situations some other stimulus should be used to supply the place of that which is taken away; which may either be perpetual, as an issue; or periodical, as a cathartic repeated once a fortnight or month.

Mifs W. an elegant young lady, of about twenty, applied a mercurial lotion to her face, which was covered with very small red points (which seemed to have been not acquired by any known or avoidable means); she was seized with inflammation of her liver, and, after repeated bleeding and cathartics, recovered; and in a few weeks the eruption appeared as before.

M. M. Five grains of calomel once a month, with a cathartic, five grains of rhubarb and a quarter of a grain of emetic tartar every night for many weeks. With this preparation mercurial plasters, made without turpentine, and applied every night, and taken off every morning, will sometimes suc-

ceed, and may be used with safety. But blistering the face all over the eruption, beginning with a part, succeeds better than any other means, as I have more than once experienced.—Something like this is mentioned in the Letters of Lady Mary Wortley Montague, who blistered her face with balsam of Mecca.

Mrs. F. had for many years had a disagreeably looking eruption on her chin. After a cathartic with calomel, she was advised to blister her whole chin; on the healing of the blister a few eruptions again appeared, which ceased on the application of a second blister. She took rhubarb five grains, and emetic tartar a quarter of a grain every night for many weeks.

Miss L. a young lady, about eighteen, had tried variety of advice, for pimples over the greatest part of her face, in vain. She took the above medicines internally, and blistered her face by degrees all over, and became quite beautiful. A spot or two now and then appeared, and on this account she frequently slept with parts of her face covered with mercurial plaster, made without turpentine, which was held on by a pasteboard mask, and taken off in the mornings; if any part of the plaster adhered, a little butter or oil destroyed the adhesion. If there be turpentine, or any other native balsam, mixed with the mercurial plaster, it is very liable much to inflame the face (I suppose like the balsam of Mecca); but if a small quantity
of

of flour of brimstone be added, I believe it will readily mix. As a mercurial ointment is said to be quickly made by adding only six grains of flour of sulphur to six drachms of mercury, and two ounces of hog's grease.

7. *Odontitis*. Inflammatory tooth-ach is occasioned by inflammation of the membranes of the tooth, or a caries of the bone itself. The gum sometimes suppurates, otherwise a swelling of the cheek succeeds by association, and thus the violence of the pain in the membranes of the tooth is relieved, and frequently cured; and when this happens the disease properly belongs to Class IV. as it so far resembles the translations of morbid actions in the gout and rheumatism.

At other times the tooth dies without caries, especially in people about sixty years of age, or before; and then it stimulates its involving membrane, like any other extraneous substance. The membrane then becomes inflamed and thickened, occasioning some pain, and the tooth rises upwards above the rest, and is gradually pushed out whole and undecayed; on its rising up a pus-like mucus is seen discharged from the gum which surrounds it; and the gum seems to have left the tooth, as the fangs or roots of it are in part naked.

M. M. Where the tooth is found it can only be saved by evacuations, by venesection, and a cathartic; and after its operation two grains of opium. A

blister may also be used behind the ear, and ether applied to the cheek externally. In slighter cases two grains of opium with or without as much camphor may be held in the mouth, and suffered to dissolve near the affected tooth, and be gradually swallowed. See Class I. 2. 4. 12. Odon-talgia may be distinguished from otitis by the application of cold water to the affected tooth; for as the pain of common tooth-ach is owing to torpor, whatever decreases stimulus adds to the torpor and consequent pain; whereas the pain of an inflamed tooth, being caused by the increased action of the membranes of it, is in some measure alleviated by the application of cold.

8. *Otitis*. Inflammation and consequent suppuration of some membranes of the internal ear frequently occur in children, who sleep in cold rooms, or near a cold wall, without a night-cap. If the bones are affected, they come out in a long process of time, and the child remains deaf of that ear. But in this case there is generally a fever attends this inflammation; and it then belongs to another genus.

M. M. A warmer night-cap. Warmish water should be gently syringed into the ear, to keep it clean, twice a day; and if it does not heal in a week, a little spirit of wine should be added; first about a fourth part, and it should be gradually increased to half rectified spirit and half water: if
it

it continues long to discharge matter with a very putrid smell, the bones are injured, and will in time find their exit; during which time the ear should be kept clean, by filling it with a weaker mixture of spirit of wine and water, or a solution of alum in water; which may be poured into the ear, as the head is inclined, and shoo out again by turning the head, two or three times morning and evening. See Class II. I. 4. 10.

9. *Fistula lacrymalis.* The lacrymal sack, with its puncta lacrymalia and nasal duct, are liable to be destroyed by suppuration without fever; the tears then run over the eyelids, and inflame the edges of them and the cheeks, by their perpetual moisture and saline acrimony.

M. M. By a nice surgical operation, a new aperture is to be made from the internal corner of the eye into the nostril, and a silver tube introduced, which supplies the defect by admitting the tears to pass again into the nostril. See *Mélanges de Chirurgie*, par M. Pouteau; who thinks he has improved this operation.

10. *Fistula in ano.* A mucous discharge from the anus, called by some white piles, or matter from a suppurated pile, has been mistaken for the matter from a concealed fistula. A bit of cotton-wool applied to the fundament to receive the matter, and renewed twice a day for a week or two, should

should always be used before examination with the probe. The probe of an unskilful empiric sometimes does more harm in the loose cellular membrane of these parts than the original ulcer, by making a fistula he did not find. The cure of a fistula in ano, of those who have been much addicted to drinking spirituous liquor, or who have a tendency to pulmonary consumption, is frequently of dangerous consequence, and is succeeded by ulcers of the lungs, and death.

M. M. Ward's paste, or 20 black pepper-corns taken after each meal twice a day; the pepper-corns should be cut each into two or three pieces. The late Dr. Munro, of Edinburgh, asserted, in his lectures, that he had known a fistula in ano cured by injecting first a mixture of rectified spirit of wine and water; and, by gradually increasing the strength of it, till the patient could bear rectified spirit alone; by the daily use of which, at length, the sides of the fistula became callous, and ceased to discharge, though the cavity was left. A French surgeon has lately affirmed, that a wire of lead put in at the external opening of the ulcer, and brought through the rectum, and twisted together, will gradually wear itself through the gut, and thus effect a cure without much pain. The ends of the leaden wire must be twisted more and more as it becomes loose. Or, lastly, it must be laid open by the knife.

11. *Fistula urethræ.* Where a stricture of the urethra exists, from whatever cause, the patient, in forcing the stream of urine through the stricture, distends the urethra behind it; which, after a time, is liable to burst, and to become perforated; and some of the urine is pushed into the cellular membrane, occasioning fistulas, which sometimes have large surfaces producing much matter, which is pressed out at the time of making water, and has been mistaken for a catarrh of the bladder; these fistulas sometimes acquire an external opening in the perinæum, and part of the urine is discharged that way.

Can this matter be distinguished from mucus of the bladder by the criterion delivered in Class II.

I. 6. 6.?

M. M. The perpetual use of bougies, either of catgut or of caoutchouc. The latter may be had at No. 37, Red-lion-street, Holborn, London. The former are easily made, by moistening the catgut, and keeping it stretched till dry, and then rounding one end with a pen-knife. The use of a warm bath every day for near an hour, at the heat of 94 or 96 degrees, for two or three months, I knew to be uncommonly successful in one case; the extensive fistulas completely healing. The patient should introduce a bougie always before he makes water, and endeavour to make it as slowly as possible. See Class I. 2. 3. 24.

12. *Hepa-*

12. *Hepatitis chronica*. Chronical inflammation of the liver. A collection of matter in the liver has frequently been found on dissection, which was not suspected in the living subject. Though there may have been no certain signs of such a collection of matter, owing to the insensibility of the internal parts of this viscus; which has thus neither been attended with pain, nor induced any fever; yet there may be in some cases reason to suspect the existence of such an abscess; either from a sense of fulness in the right hypochondre, or from transient pains sometimes felt there, or from pain on pressure, or from lying on the left side, and sometimes from a degree of sensitive fever attending it.

Dr. Saunders suspects the acute hepatitis to exist in the inflammation of the hepatic artery, and the chronical one in that of the vena portarum. Treatise on the Liver. Robinsons, London.

13. *Scrofula suppurans*. Suppurating scrofula. The indolent tumors of the lymphatic glands are liable, after a long time, to regain their sensibility; and then, owing to their former torpor, an increased action of the vessels, beyond what is natural, with inflammation, is the consequence of their new life, and suppuration succeeds. This cure of scrofula generally happens about puberty, when a new energy pervades the whole system, and unfolds the glands and organs of reproduction.

M, M. See

M. M. See Class I. 2. 3. 21. Where scrofulous ulcers about the neck are difficult to heal, Dr. Beddoes was informed, in Ireland, that an empiric had had some success by inflaming them by an application of wood sorrel, *oxalis acetosella*, the leaves of which are bruised in a mortar, and applied on the ulcers for two or three days, and then some more lenient application is used.

A poor boy, about twelve years old, had a large scrofulous ulcer on one side of the chest beneath the clavicle, and another under his jaw; he was directed, about three weeks ago, to procure a pound of dry oak-bark from the tanners, and to reduce it to fine powder, and to add to it one ounce of white lead in fine powder, and to cover the ulcers daily with it, keeping it on by brown paper and a bandage. He came to me a few minutes ago, to shew me that both the ulcers are quite healed. The constant application of linen rags, moistened with a solution of an ounce of sugar of lead in a pint of water, I think I have seen equally efficacious.

Small doses internally of a solution of arsenic have been said to contribute to cure these ulcers. I should recommend from one drop to five of a saturated decoction of arsenic, as directed in *Mat. Med.* Art. IV. 2. 6. 8. for children, twice or thrice a day, according to their age, and from five to ten to grown persons, diminishing the quantity if it affects the bowels.

bowels. Tincture of Digitalis is recommended in Class I. 2. 3. 21.

14. *Scorbutus suppurans*. In the sea-scurvy there exists an inactivity of venous absorption, whence vibices and petechiæ, and sometimes ulcers. As the column of blood pressing on the origins of the veins of the lower extremities, when the body is erect, opposes the ascent of the blood in them, they are more frequently liable to become enlarged, and to produce varixes, or vibices, or, lastly, ulcers about the legs, than on the upper parts of the body. The exposure to cold is believed to be another cause of ulcers on the extremities; as happens to many of the poor in winter, at Lisbon, who sleep in the open air, without stockings, on the steps of their churches or palaces. See Class I. 2. 1. 15.

M. M. A bandage spread with plaster to cover the whole limb tight. Rags dipped in a solution of sugar of lead. A warm flannel stocking or roller. White lead and oak-bark, both in fine powder. Horizontal rest. An ingenious treatise on the use of bandage, in the cure of ulcers, has lately been published by Mr. Baynton, of Bristol; and another, on the same subject, by Mr. Whately, of London, who succeeds without using plaster on the bandage.

15. *Scirrhus suppurans*. When a scirrhus affects
any

any gland of no great extent or sensibility, it is, after a long period of time, liable to suppurate without inducing fever, like the indolent tumors of the conglobate or lymphatic glands above mentioned; whence collections of matter are often found after death, both in men and other animals; as in the livers of swine, which have been fed with the grounds of fermented mixtures in the distilleries. Another termination of scirrhus is in cancer, as described below. See Class I. 2. 3. 22.

16. *Carcinoma*. Cancer. When a scirrhus tumor regains its sensibility by nature, or by any accidental hurt, new vessels shoot amongst the yet insensible parts of it, and a new secretion takes place of a very injurious material. This cancerous matter is absorbed, and induces swelling of the neighbouring lymphatic glands; which also become scirrhus, and afterwards cancerous.

This cancerous matter does not seem to acquire its malignant or contagious quality, till the cancer becomes an open ulcer; and the matter secreted in it is thus exposed to the air. Then it evidently becomes contagious, because it not only produces hectic fever, like common matter in ulcers open to the air; but it also, as it becomes absorbed, swells the lymphatic glands in its vicinity; as those of the axilla, when the open cancer is on the breast. See Class II. 1. 3.

Hence excision before the cancer is open is
generally

generally a cure; but after the matter has been exposed to the air, it is seldom of service; as the neighbouring lymphatic glands are already infected. I have observed some of these patients after the operation to have had diseased livers, which might either have previously existed, or have been produced by the fear or anxiety attending the operation.

Erosion with arsenic, after the cancer is become an open ulcer, has generally no better effect than excision, but has been successful before ulceration. The best manner of using arsenic, is by mixing one grain with a drachm of lapis calaminaris, and strewing on the cancer some of the powder every day, till the whole is destroyed.

Cancers on the face are said to arise from the periosteum, and that, unless this be destroyed by the knife, or by caustics, the cancer certainly recurs. After the cancer becomes an open ulcer of some extent, a purulent fever supervenes, as from other open ulcers, and gradually destroys the patient. See Class II. I. 6. 13.

Two very interesting cases have been lately published by Dr. Ewart, of Bath, in which carbonic acid gas, or fixed air, was kept constantly in contact with the open cancerous ulcers of the breast; which then healed like other common ulcers. This is rather to be ascribed to the exclusion of oxygen, than to any specific virtue in the carbonic acid. As in common ulcers the matter does not induce

hectic fever, till it has been exposed to the air, and then probably united with oxygen.

The manner of applying the fixed air, is by including the cancer in one half, or hemisphere, of a large bladder; the edges are made to adhere to the skin by adhesive plaster, or perhaps a mixture of one part of honey with about twenty parts of carpenter's glue might better suit some tender skins. The bladder is then kept constantly filled with carbonic acid gas, by means of a pipe in the neck of it; and the matter let out at a small aperture beneath.

M. M. Where extirpation is not advisable, as in most open cancers of the breast, keep the ulcer carefully from the air, either by applying carbonic acid gas, as above; or by covering it with charcoal in powder, and a double oiled silk. The charcoal-powder should be renewed once in two or three days, and at those times it should be pushed off by fresh charcoal-powder on lint, so as not for a moment to expose it to the air. The charcoal should be fresh taken from the fire, and powdered very fine as soon as cool, and kept in a bottle to be as little exposed to the air as possible.

The tumor should be suspended by a sash or soft cushion, so as to keep it as easy as possible night and day, and should be kept neither too warm nor too cold, as both extremes are injurious.

Internally, six grains of rhubarb every night,
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for many months, and to drink nothing stronger than common weak small beer, consisting of three strike of malt to the hogshead, or wine diluted with thrice its quantity of water.

If caustics cannot be applied so as to destroy the whole, even before ulceration, I suspect that they aggravate the evil, and sooner destroy the patient; as, I was well informed, occurred to a quack who was for a time much resorted to, in this part of the country.

Another method of using charcoal-powder is by mixing it with boiled oil, to the consistence of common paint; and to soak a piece of flannel with this, and cover the ulcer; and daily to shove or thrust this off by applying the edge of another piece of flannel, soaked with the oil and charcoal, to the edge of that upon the ulcer, so as to change them without the possibility of letting any air come into contact with the cancerous fore.

17. *Arthrocele*. Swelling of the joints seems to have its remote cause in the softness of the bones, for they could not swell unless they were previously softened, see Class I. 2. 2. 12. The epiphyses, or ends of the bones, being naturally of a looser texture, are most liable to this disease, and perhaps the cartilages and capsular ligaments may also become inflamed and swelled along with the heads of the bones. This malady is liable to distort the fingers and knees, and is usually called
gout

gout or rheumatism; the former of which is liable to disfigure the fingers by chalk-stones, and thence to have somewhat a similar appearance. But the arthrocele, or swelling of the joints, affects people who have not been intemperate in the use of fermented or spirituous liquors; or who have not previously had a regular gout in their feet; and in both these circumstances differs from the gout. Nor does it accord with the inflammatory rheumatism, as it is not attended with fever, and because the tumors of the joints never entirely subside. The pain or sensibility, which the bones acquire when they are inflamed, may be owing to the new vessels, which shoot in them in their soft state, as well as to the distention of the old ones.

M. M. Half a grain of opium twice a day, gradually increased to a grain, but not further, for many months. Thirty grains of powder of bark twice a day for many months. Ten grains of bone-ashes, or calcined hartshorn, twice a day, with decoction of madder? Soda phosphorata?

18. *Arthropuosis*. Joint-evil. This differs from the former, as that never suppurates; these ulcers of the joints are generally esteemed to arise from scrofula; but as scrofula is a disease of the lymphatic or absorbent system, and this consists in the suppuration of the membranes, or glands, or car-

tilages about the joints, there does not seem a sufficient analogy to authorize their arrangement under the same name.

The white swelling of the knee, when it suppurates, comes under this species, with variety of other ulcers, attended with carious bones.

19. *Caries ossium*, or *Necrosis ossium*. A caries of the bones may be termed a suppuration of them; it differs from the above, as it generally is occasioned by some external injury, as in decaying teeth; or by venereal virus, as in nodes on the tibia; or by other matter derived to the bone in malignant fevers; and is not confined to the ends of them.

The separation of the dead bone from the living is a work of some time. See Sect. XXXIII. 3. 1. A new and able work on the necrosis of bones is published by I. Ruffel, Edinburgh; London, Robinsons. And another by I. P. Weidmann, de *Necrosi Ossium* at Francfort; Boosey, London; which is also a valuable work.

M. M. When this disease is not formed in syphilis, or by metastasis in fever, but is simply an inflammation of the periosteum, or of the solid bone, or of its-medullary cells, the method of cure should consist in evacuations by bleeding and cathartics, and by leeches applied to the painful or tumid parts; and afterwards by taking inwardly soda phosphorata and a decoction of rubia tinctorum,

torum, madder-root; as the former is believed to give solidity to bones, and the latter, as it colours the bones of young or growing animals, is known to be carried thither during their softer or more sensitive state, and may be therefore worth a trial. See Innutritio ossium. Class I. 2. 2, 14.

ORDO I.

Increased Sensation.

GENUS V.

With the Production of new Vessels by external Membranes or Glands, without Fever.

THE ulcers, or eruptions, which are formed on the external skin, or on the mouth or throat, or on the air-cells of the lungs, or on the intestines, all of which are more or less exposed to the contact of the atmospheric air, which we breathe, and which in some proportion we swallow with our food and saliva; or to the contact of the inflammable air, or hydrogen, which is set at liberty by the putrefying aliment in the intestines, or by putrefying matter in large abscesses; all of them produce contagious matter; which, on being inoculated into the skin of another person, will produce fever, or a similar disease.

In some cases even the matter formed beneath the skin becomes in some degree contagious, at least so much so as to produce fever of the hectic or malignant kind, as soon as it has pierced through the skin, and has thus gained access to some kind of air; as the fresh pus of a common abscess; or the putrid pus of an abscess, which has been long confined; or of cancerous ulcers.

From this analogy there is reason to suspect that the matter of all contagious diseases, whether with or without fever, is not infectious till it has acquired something from the air; which, by oxygenating the secreted matter, may probably produce a new acid. And, secondly, that in hectic fever a part of the purulent matter is absorbed; or acts on the surface of the ulcer; as variolous matter affects the inoculated part of the arm. And that hectic fever is therefore caused by the matter of an open ulcer; and not by the sensation in the ulcer independent of the aerated pus, which lies on it. Which may account for the venereal matter from buboes not giving the infection, according to the experiments of the late Mr. Hunter, and for some other phenomena of contagion. See *Variola discreta*, Class II. 1. 3. 9.

SPECIES.

1. *Gonorrhœa venerea*. A pus-like contagious material discharged from the urethra after impure cohabitation, with smarting or heat on making water; which begins at the external extremity of the urethra, to which the contagious matter is applied, and where it has access to the air; which probably heightens its acrimony.

M. M. In this state of the venereal disease, once venesection, with mild cathartics of senna and manna, with mucilage, as almond emulsion, and

gum arabic, taken for two or three weeks, absolve the cure. Is camphor of use to relieve the ardor urinæ? Do balsams increase or lessen the heat of urine? Neutral salts certainly increase the smarting in making water, by increasing the acrimony of the urine.

Can the discharge from the urethra be soon stopped by saturnine injections, or mercurial ones, or with solution of blue vitriol, at first very dilute, and gradually made stronger? And at the same time, lest the syphilis, or general disease, should supervene, the patient might take a quarter of a grain of corrosive sublimate of mercury twice a day, as directed below?

There is a curious paper by Mr. Addington, of West Bromage, in the Contributions of Medical Knowledge, published by Dr. Beddoes, on the cure of gonorrhœa virulenta, by large doses of corrosive sublimate of mercury, hydrargyrus muriatus. Three grains of corrosive sublimate of mercury are dissolved in one ounce of rectified spirit of wine. Half of this mixture is taken undiluted at going to bed; it produces a copious salivation for an hour and a half, or longer, during which the patient spits a quart. Some Glauber's salts are to be taken on the second day after this operation, and on the evening of that day he is to repeat the draught, and the salts on the day but one following. And Mr. Addington witnessed that three or four such doses frequently cured a venereal gonorrhœa

gonorrhœa in so short a time, without any disagreeable consequence, and was informed that hundreds had been cured by it.

The probable mode of action of this medicine is owing to the consent of parts between the throat and the urethra, of which many instances are given in Class IV. I. 2. 7. on Hydrophobia.

Mr. Wright, an elderly surgeon in Derby, thirty years ago, assured me that he had frequently given half a drachm of corrosive sublimate as an emetic, without any inconvenience to the patient; and that it was the famous emetic of a celebrated empiric, and had been said to do wonders.

Might not this dose of one grain and a half, dissolved in half an ounce of rectified spirit, be given repeatedly, with prospect of advantage, in Hydrophobia? And perhaps, in an adapted strength and quantity, in Hydrocephalus? If in Croup, Peripneumonia trachealis?

2. *Syphilis*. Venereal disease. The contagion shews itself in ulcers on the part first inoculated, as chancres; ulcers on the tonsils succeed, with eruption on the skin, especially about the roots of the hair; afterwards on other parts of the skin, terminating in dry scabs; and, lastly, with pain and swelling of the bones.

The corona veneris, or crown of Venus, consists of the eruptions at the roots of the hair appearing most round the forehead; which is occasioned

sioned by this part being more exposed to the air ; which we observed, at the beginning of this genus, either produces or increases the virulence of contagious matter. But it is difficult to conceive, from this history, why the throat should be first affected ; as it cannot be supposed, that the disease is so often taken by the saliva, like the small-pox, though this may sometimes occur ; perhaps very often. The connection between the genitals in men and the throat, is treated of in Class IV. 1. 2. 7. Hydrophobia.

M. M. A quarter of a grain of corrosive sublimate of mercury, taken thrice a day for five or six weeks, made into a pill with bread-crumbs, or dissolved in a spoonful of brandy and water, is a very efficacious and almost certain cure. When it does not succeed, it is owing either to the drug being bad, or to its having precipitated from the brandy, or from its being spoiled in the pill by long keeping. Opium contributes much to expedite the cure, both of the simple gonorrhœa and of venereal ulcers, by increasing absorption both from the mucous membrane and from the surface of ulcers. A quarter of a grain, or half a grain, may be given with every dose of the sublimate.

Nitrous acid has been lately strongly recommended, by Mr. Scott, in venereal cases ; from an idea that the oxygen, which it consists of in part, is loosely combined, and may be separable in the animal system ; and that it may be the oxygen, only,

only, which exists loosely in mercurial calces or oxydes, that acts so successfully, when mercurials are exhibited. Some successful exhibitions of this acid in venereal cases are published; the dose is one drachm and a half, or two drachms, of the strong nitric acid mixed in two pounds of water, to be drunk daily at repeated intervals. Mr. Scott has since used the nitrous acid much diluted with water externally as a warm bath, either partially or generally, with great success, at Bombay, in venereal cases. See Article II. 2. 4. and IV. 2. 7. 1. in the *Materia Medica*.

It has been now used in this country with success by some, and without success by others, and may perhaps assist the use of mercurials as well as opium in the cure of venereal ulcers; but should not yet be solely depended upon.

3. *Lepra*. Leprosy. Leprosy of the Greeks. The skin is rough with white branny scales, which are full of chinks; often moist beneath, and itching. The scales on the head or arms of some drinking people are a disease of this kind. The perspirable matter designed for the purpose of lubricating the external skin is secreted in this disease in a too viscid state, owing to the inflammation of the subcutaneous vessels; and, as the absorbents act too strongly at the same time, a viscid mucus is left adhering to the surface of the skin.

In the leprosy of the Jews, described in the
thirteenth

thirteenth and fourteenth chapters of Leviticus, the depression of the fore-beneath the surface of the skin, and the hairs in it becoming white, seem to have been the principal circumstances, which the priest was directed to attend to for the purpose of ascertaining the disease.

M. M. Effence of antimony, from 20 drops to 100, twice or thrice a day, with half a pint of decoction of elm-bark; or of malt-tea; or tincture of cantharides, from 20 to 60 drops, four times a day; or sublimate of mercury, with much diluting fluid. Acid of vitriol? Perhaps the cure chiefly depends on much dilution with water, from two to four pints a day, in which elm-bark, or pine-buds, or juniper-tops, may be boiled. Bath or Buxton water drunk in large quantities. Warm bath. Oil-skin bound on the part to confine the perspirable matter. Ointment of tar and suet; or poultice for two or three days, and then cerate with lapis calaminaris. Diet of raisins and bread. Abstinence from wine, beer, and all spirits, is indispensably necessary to the cure.

4. *Elephantiasis*. Leprosy of the Arabs. A contagious disease; the skin is thickened, wrinkled, rough, unctuous, destitute of hair, without any sensation of touch in the extremities of the limbs; the face deformed with tubercles; the voice hoarse, and with a nasal tone. Cullen.

5. *Tram-*

5. *Framboesia*. Yaws is said to be contagious and hereditary. It principally affects the negroes in the West Indies. Edinb. Essays, Vol. VI.

6. *Psoa*. Itch. A contagious prurient eruption. There are two kinds of itch : that which appears between the fingers, and under the joints of the knees and elbows ; and that which seldom is seen in these places, but all over the other parts of the body. The latter is seldom thought to be the itch, as it does not easily infect even a bed-fellow, and resists the usual means of cure by brimstone.

If the itch be cured too hastily, by rubbing mercurial or arsenical preparations over the whole body, or on too great a part of it, many bad symptoms are produced ; as weakness of digestion, with pale bloated countenance, and tendency to dropfy. I have twice seen St. Vitus's dance occur, from the use of a mercurial girdle ; and once a swelled liver. I have also seen a swelled spleen and swelled legs from the external use of arsenic in the cure of the itch. And very numerous and large phlegmons commonly succeed the too hasty cure of it by other means.

There does not appear a strict analogy between the hasty cure of the itch, and the retrocession of the pustules in the secondary fever of the small-pox ; because in that the absorption of the matter is evinced by the swelling of the face and hands, as
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the pustules recede, as explained in Class II. 1. 3. 9. Variola discreta. And a fever is produced by this absorption; neither of which happen, when the pustules of the itch are destroyed by mercury or arsenic.

Nor can these inconveniences, which occur on the too hasty cure of the itch, be explained by those which follow the cure of some kinds of gutta rosea, Class II. 1. 4. 6. as in those the eruptions on the face were an associated disease with inflammation of the liver or stomach, which they were accustomed to relieve; whereas the itch is not known to have had any previous catenation with other diseases.

In the itch there exists not only great irritation in the production of the pustules, but great sensation is caused by their acrimony afterwards; insomuch that the pain of itching, without the interrupted smarting occasioned by scratching, would be intolerable. This great excitement of the two sensorial powers of irritation and sensation is so great, when the pustules are diffused over the whole surface of the body, that a torpor succeeds the sudden ceasing of it; which affects those parts of the system which were most catenated with the new motions of the skin, as the stomach, whence indigestion and flatulency; or which are generally most liable to fall into torpor, as the numerous glands, which form the liver. Whence the diseases consequent to the hasty cure of the itch are diseases
of

of debility, as tumid viscera, œdematous swellings, and St. Vitus's dance, which is a debility of association. In the same manner indigestion, with green evacuations, are said to follow an injudicious application of cerussa to stop too hastily the exsudation behind the ears of children, Class I. 1. 2. 9. And dropsies are liable to succeed the cure of old ulcers of the legs, which have long stimulated the system.

M. M. The size of a large pea, of an ointment consisting of one part of white precipitate of mercury to six parts of hog's lard well triturated together, to be rubbed on a part of the body every night, and washed off with soap and water next morning, till every part is cleared; with lac sulphuris twenty grains to be taken every morning inwardly. Warm saline bath, with white vitriol in it. Flowers of sulphur mixed with thick gruel, or with hog's fat. With either of which the body may be smeared all over.

Mr. Grille says, that those who get manganese from its mines are not subject to the itch; and that he found an ointment, composed of six parts of finely levigated manganese and of sixteen parts of lard, a more efficacious remedy for the itch than those in common use. Parmentier.

7. *Pfora ebriorum*. Elderly people, who have been much addicted to spirituous drinks, as beer, wine, or alcohol, are liable to an eruption all over their
their

their bodies ; which is attended with very afflicting itching, and which they probably propagate from one part of their bodies to another with their own nails by scratching themselves. I saw fatal effects in one such patient, by a too extensive use of a solution of lead ; the eruption disappeared, he became dropsical, and died ; I suppose from the too suddenly ceasing of the great stimulus caused by the eruptions over the whole skin, as in the preceding article.

M. M. The patient should gradually accustom himself to half his usual quantity of vinous potation. The warm bath, with one pound of salt to every three gallons. Mercurial ointments on small parts of the skin at a time. A grain of opium at night instead of the usual potation of wine or beer.

8. *Herpes*. Herpes consists of gregarious spreading excoriations, which are succeeded by branny scales or scabs. In this disease there appears to be a deficient absorption of the subcutaneous mucus, as well as inflammation and increased secretion of it. For the fluid not only excoriates the parts in its vicinity by its acrimony, but is very saline to the taste, as some of these patients have assured me ; I believe this kind of eruption, as well as the tinea, and perhaps all other cutaneous eruption, is liable to be inoculated in other parts of the body by the finger-nails of the patients in scratching themselves.

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It is liable to affect the hands, and to return at distant periods; and is probably a secondary disease, as well as the zona ignea, or shingles, described below.

M. M. Poulrice the eruption with bread and milk, or raw carrots grated, for two or three whole days, to dilute or receive the discharged fluid, and abate the inflammation; then cover the parts with fresh cerate mixed with lapis calaminaris. On the parts not excoriated mercurial ointment, made of one part of white calx of mercury and six of hog's fat. Internally, after venesection, gentle repeated cathartics. Lastly, the bark. Acid of vitriol. Bolus Armeniæ, or testacea. Antimonials. Decoction of interior bark of elm.

9. *Zona ignea*. Shingles. This eruption has been thought a species of herpes by some writers, and by others a species of erysipelas. Yellow or livid vesicles appear, producing a corrosive ichor, which is sometimes attended with a degree of fever. It is said to infest sometimes the thorax and ribs, but its most general situation is on the small of the back, over one kidney, extending forward over the course of one of the ureters.

There is reason to suspect, that this also is a secondary or sympathetic disease, as well as the preceding one; but future observations are required, before it can be removed to the fourth class, or diseases of association. In three patients I have

been induced to believe, that the eruption on the loins was a translation of inflammation from the external membrane of the kidney to the skin. They had, for a day or two before the appearance of the eruption, complained of a dull pain on the region of one kidney, but without vomiting; by which it was distinguished from nephritis interna, or gravel; and without pain down the outside of the thigh, by which it was distinguished from sciatica. In other situations the shingles may sympathize with other internal membranes, as in a case published by Dr. Ruffel (*De Tabæ Glandulari*), where the retrocession of the shingles was succeeded by a serious dyspnoea.

M. M. Venesection, if the pulse is strong. Calomel three or four grains, very mild repeated cathartics. Poultice for a few days, then cerate of lapis calaminaris, as in herpes. A grain of emetic tartar dissolved in a pint of water, and taken so as to empty the stomach and intestines, is said much to hasten the cure; compresses soaked in a saturnine solution are recommended externally on the eruption; and cerate where there are ulcerations. *Desanet's Surgical Journal*, Vol. II. p. 378. If this be a vicarious disease, it should continue half a lunation; lest, on its ceasing, the bad habits of motion of the primary disease should not have been so perfectly dislevered, but that they may recur.

10. *Annulus repens*. Ring-worm. A prurient eruption formed in a circle, affecting children, and would seem to be the work of insects, according to the theory of Linnæus, who ascribes the itch and dysentery to microscopic animalcula. These animalcula are probably the effect, and not the cause, of these eruptions; as they are to be seen in all putrescent animal fluids. The annular propagation of the ring-worm, and its continuing to enlarge its periphery, is well accounted for by the acrimony of the ichor or saline fluid eroding the skin in its vicinity.

M. M. Cover the eruption daily with ink. With white mercurial ointment, as described above in herpes. With solution of white vitriol ten grains to an ounce. These metallic calces stimulate the absorbents into stronger action, whence the fluid has its saline part reabsorbed, and that before it has access to the air, which probably adds to its acrimony by oxygenating it, and thus producing a new acid.

11. *Tinea*. Scald head. This contagious eruption affects the roots of the hair, and is generally most virulent round the edges of the hair on the back part of the head; as the *corona veneris* appears most on the edges of the hair on the fore part of the head: for in these parts the eruption about the roots of the hair is most exposed to the

external air, by which its acrimony or noxious quality is increased.

The absorption of the matter thus oxygenated swells the lymphatics of the neck by its stimulus, occasioning many little hard lumps beneath the seat of the eruption; when this happens, the sooner it is cured the better, lest the larger lymphatics of the neck should become affected.

M. M. The art of curing these eruptions consists, first, in abating the inflammation, and consequent secretion of a noxious material. Secondly, in preventing its access to the air, which so much increases its acrimony. And thirdly, in promoting the absorption of it, before it has been exposed to the air. For these purposes venesection once, and gentle cathartics, which promote absorption by emptying the blood-vessels. Next poultices and fomentations, with warm water, abate inflammation by diluting the saline acrimony of the secreted fluid, and abating the painful sensation. Afterwards cerate joined with some metallic calx, as of zinc or lead, or solution of lead, mercury, or copper, or iron, which may stimulate the absorbent system into stronger action.

Cover the shaved head with tar and suet, and a bladder; this, by keeping the air from the secreted fluid, much contributes to its mildness, and the stimulus of the tar increases its absorption. See the three preceding species of this genus.

Mr.

Mr. Morison of Dublin cures the tinea capitis by what he terms an adhesive paste, which is made by boiling half a pound of fine flour in two pounds of common ale, and then adding four ounces of yellow resin in fine powder, and stirring them well together, until they are perfectly incorporated. After removing the hair, and poulticing the head for a day or two, to take off the hard scabs, this paste is spread on slips of linen, which are applied over the whole affected part, and removed and fresh ones applied every morning, —after one or two days, I suspect, that removing the plasters seldomer might be more advantageous.

12. *Crusta lactea*. Milk-crust is a milder disease than tinea, affecting the face as well as the hairy scalp of very young children. It is not infectious, nor liable to swell the lymphatics in its vicinity like the tinea.

M. M. Cover the eruption with cerate made with lapis calaminaris, to be renewed every day. Mix one grain of emetic tartar with forty grains of chalk, and divide into eight papers, one to be taken twice a day, or with magnesia alba, if stools are wanted. The child should be kept cool and much in the air.

13. *Trichoma*. Plica polonica. A contagious disease, in which the hair is said to become alive

and bleed, forming inextricable knots or plaits of great length, like the fabled head of Medusa, with intolerable pain, so as to confine the sufferer on his bed for years.

O R D O I.

Increased Sensation.

G E N U S VI.

With Fever consequent to the Production of new Vessels or Fluids.

S P E C I E S.

1. *Febris sensitiva*. Sensitive fever, when unmixed with either irritative or inirritative fever, may be distinguished from either of them by the less comparative diminution of muscular strength; or in other words, from its being attended with less diminution of the sensorial power of irritation. An example of unmixed sensitive fever may generally be taken from the pulmonary consumption; in this disease patients are seen to walk about with ease, and to do all the common offices of life for weeks, and even months, with a pulse of 120 strokes in a minute; while in other fevers, whether irritated or inirritated, with a pulse of this frequency, the patient generally lies upon the bed, and exerts no muscular efforts without difficulty.

The cause of this curious phenomenon is thus to be understood; in the sensitive fever a new sensorial power, viz. that of sensation, is super-added to that of irritation; which in other fevers

alone carries on the increased circulation. Whence the power of irritation is not much more exhausted than in health; and those muscular motions, which are produced in consequence of it, as those which are exerted in keeping the body upright in walking, riding, and in the performance of many customary actions, are little impaired. For an account of the irritated sensitive fever, see Class II. 1. 2. 1.; for the inirritated sensitive fever, Class II. 1. 3. 1. IV. 2. 4. 11.

2. *Febris a pure clauso.* Fever from enclosed matter is generally of the irritated sensitive kind, and continues for many weeks, and even months, after the abscess is formed; but is distinguished from the fever from aerated matter in open ulcers, because there are seldom any night-sweats, or colliquative diarrhoea in this, as in the latter. The pulse is also harder, and requires occasional venesection, and cathartics, to abate the inflammatory fever; which is liable to increase again every three or four days, till at length, unless the matter has an exit, it destroys the patient. In this fever the matter, not having been exposed to the air, has not acquired oxygenation; in which a new acid, or some other noxious property, is produced; which acts like contagion on the constitution inducing fever-fits, called hectic fever, which terminate with sweats or diarrhoea; whereas the matter in the closed abscess is either not absorbed, or does
not

not so affect the circulation as to produce diurnal or hectic fever-fits; but the stimulus of the abscess excites so much sensation as to induce perpetual pyrexia, or inflammatory fever, without such marked remissions. Nevertheless there sometimes is no fever produced, when the matter is lodged in a part of little sensibility, as in the liver; yet a white pus-like sediment in those cases exists I believe generally in the urine, with occasional wandering pains about the region of the liver or chest.

3. *Vomica*. An abscess in the lungs is sometimes produced after peripneumony, the cough and shortness of breath continue in less degree, with difficulty in lying on the well side, and with sensitive irritated fever, as explained in the preceding article.

The occasional increase of fever, with hard pulse and fizy blood, in these patients, is probably owing to the inflammation of the walls of the vomica; as it is attended with difficulty of breathing, and requires venesection. Mr. B——, a child about seven years old, lived about seven weeks in this situation, with a pulse from 150 to 170 in a minute, without sweats, or diarrhœa, or sediment in his water, except mucus occasionally; and took sufficient nourishment during the whole time. The blood taken was always covered with a strong cupped size, and on his death three or four pints of matter were found in one side of the chest; which

which had probably, but lately, been effused from a vomica. This child was frequently induced to swing, both in a reciprocating and in a rotatory swing, without any apparent absorption of matter; in both these swings he expressed pleasure, and did not appear to be vertiginous.

M M. Repeated emetics. Digitalis? Perseverance in rotatory swinging. See Class II. 1. 6. 7.

Mr. I. had laboured some months under a vomica after a peripneumony, he was at length taken with a catarrh, which was in some degree endemic in March 1795, which occasioned him to sneeze much, during which a copious hæmorrhage from the lungs occurred, and he spit up at the same time half a pint of very fetid matter, and recovered. Hence errhines may be occasionally used with advantage.

4. *Empyema*. When the matter from an abscess in the lungs finds its way into the cavity of the chest, it is called an empyema. A servant man, after a violent peripneumony, was seized with symptoms of empyema, and it was determined, after some time, to perform the operation; this was explained to him, and the usual means were employed by his friends to encourage him, “by advising him not to be afraid.” By which good advice he conceived so much fear, that he ran away early next morning, and returned in
about

about a week quite well. Did the great fear promote the absorption of the matter, like the sickness occasioned by digitalis? Fear renders the external skin pale; by this continued decrease of the action of the absorbents of the skin might not those of the lungs be excited into greater activity? and thus produce increased pulmonary absorption by reverse sympathy, as it produces pale urine, and even stools, by direct sympathy?

M. M. Digitalis?

5. *Febris Mesenterica*. Fever from matter formed in the mesentery is probably more frequent than is suspected. It commences with pain in the bowels, with irritated sensitive fever; and continues many weeks, and even months, requiring occasional venesection, and mild cathartics; till at length the continuance of the pyrexia, or inflammatory fever, destroys the patient. This is an affection of the lymphatic glands, and properly belongs to scrofula; but as the matter is not exposed to the air, no hectic fever, properly so called, is induced.

6. *Febris a pure aerato*. Fever from aerated matter. A great collection of matter often continues a long time, and is sometimes totally absorbed, even from venereal buboes, without producing any disorder in the arterial system. At length, if it becomes putrid by its delay, and one part of the
matter

matter thus becomes aerated by the air given out by the other part; or if the ulcer has been opened, so that any part of it has been exposed to the air for but one day, a hectic fever is produced. Whence the utility arises of opening large abscesses by setons, as in that case little or no hectic fever is induced; because the matter is squeezed out by the side of the spongy threads of cotton, and little or no air is admitted; or by tapping the abscess with a trocar, as mentioned in ischias, Class II. 1. 2. 18.

In this fever the pulse is about 120 in a minute, and its access is generally in an evening, and sometimes about noon also, with sweats or purging towards morning, or urine with pus-like sediment; and the patients bear this fever better than any other with so quick a pulse; and lastly, when all the matter from a concealed ulcer is absorbed, or when an open ulcer is healed, the hectic fever ceases. Here the absorbed matter is supposed to produce the fever, and the diarrhœa, sweats, or copious muddy urine, to be simply the consequence of increased secretion, and not to consist of the purulent matter, which was supposed to be absorbed from the ulcer. See *Sudor calidus*, Class I. 1. 2. 3.

The action of the air on ulcers, as we have already shewn, increases the acrimony of the purulent matter, and even converts it into a weaker kind of contagious matter; that is, to a material inducing

inducing fever. This was ascribed to the union of the azotic part of the atmosphere with the effused pus in Sect. XXVIII. 2. but by contemplating more numerous facts and analogies, I am now induced to believe, that it is by the union of oxygen with it; first, because oxygen so greedily unites with other animal substances, as the blood, that it will pass through a moist bladder to combine with it, according to the experiment of Dr. Priestley. Secondly, because the poisons of venomous creatures are supposed to be acids of different kinds, and are probably formed by the contact of air after their secretion. And lastly, because the contagious matter from other ulcers, as in itch, or small-pox, is formed on external membranes, and are probably combinations of animal matter and oxygen, producing other new acids.

Since having written the above, Dr. Mitchill, of New York, has spoken much of the septic quality of azote, or nitrogen; and thinks that it is the union of this part of the atmosphere with the matter of ulcers, which produces or increases its contagious or fever-exciting property; which I had myself at first believed, as mentioned in Part I. Sect. XXVIII. 2. In support of this opinion, it may be said, that proper ventilation with purer air is believed certainly to diminish or destroy infection; as spoken of in Class II. 1. 3. where it is proposed to disengage oxygen from manganese, for the purpose of purifying crowded apartments.

But

But further experiments must determine this curious inquiry; which might be attended with important consequences, if azote, and not oxygen, could be shewn to prevent the healing of pulmonary ulcers; as oxygen might be respired alone, or mixed with hydrogen or with carbonic acid gas, instead of with azote.

It was thought a subject of consequence by the *Æsculapian Society* at Edinburgh, to find a criterion which should distinguish pus from mucus, for the purpose of more certainly discovering the presence of ulcers in pulmonary diseases, or in the urinary passages. For this purpose that society offered their first gold medal, which was conferred on the late Mr. Charles Darwin, in the year 1778, for his experiments on this subject. From which he deduces the following conclusions:

“ 1. Pus and mucus are both soluble in the vitriolic acid, though in very different proportions; pus being much the less soluble.

“ 2. The addition of water to either of these compounds decomposes it; the mucus thus separated, either swims on the mixture, or forms large flocci in it; whereas the pus falls to the bottom, and forms on agitation a uniform turbid mixture.

“ 3. Pus is diffusible through a diluted vitriolic acid, though mucus is not; the same occurs with water, or a solution of sea salt.

“ 4. Nitrous acid dissolves both pus and mucus;

water added to the solution of pus produces a precipitate; and the fluid above becomes clear and green; while water and the solution of mucus form a dirty coloured fluid.

“ 5. Alkaline lixivium dissolves (though sometimes with difficulty) mucus, and generally pus.

“ 6. Water precipitates pus from such a solution, but does not mucus.

“ 7. Where alkaline lixivium does not dissolve pus, it still distinguishes it from mucus; as it then prevents its diffusion through water.

“ 8. Coagulable lymph is neither soluble in diluted nor concentrated vitriolic acid.

“ 9. Water produces no change on a solution of serum in alkaline lixivium, until after long standing, and then only a very slight sediment appears.

“ 10. Corrosive sublimate coagulates mucus, but not pus.

“ From the above experiments it appears, that strong vitriolic acid and water, diluted vitriolic acid, and caustic alkaline lixivium and water, will serve to distinguish pus from mucus; that the vitriolic acid can separate it from coagulable lymph, and alkaline lixivium from serum.

“ And hence, when a person has any expectorated material, the composition of which he wishes to ascertain, let him dissolve it in vitriolic acid, and in caustic alkaline lixivium; and then add pure water to both solutions: and if there is a fair precipitation

precipitation in each, he may be assured that some pus is present. If in neither a precipitation occurs, it is a certain test, that the material is entirely mucus. If the material cannot be made to dissolve in alkaline lixivium by time and trituration, we have also reason to believe that it is pus." Experiments on Pus and Mucus. Cadell. London.

Dr. Cappe, of York, in his inaugural treatise de Hæctica, and Dr. Ryan, of Dublin, in his Essay on Consumption, have repeated these experiments of Mr. Darwin with nearly similar results.

7. *Phthisis pulmonalis*. In pulmonary consumption the fever is generally supposed to be the consequence of the stimulus of absorbed matter circulating in the blood-vessels, and not simply of its stimulus on their extremities in the surface of the ulcers; as mentioned in Class II. 1. 5. and Class II. 1. 3. 9. The ulcers are probably sometimes occasioned by the putrid acrimony of effused blood remaining in the air-cells of the lungs after an hæmoptoe. See Class I. 2. 1. 9. The remote cause of consumption is ingeniously ascribed by Dr. Beddoes to the hyper-oxygenation of the blood, as mentioned Section XXVIII. 2.

As the patients liable to consumption are of the irritable temperament, as appears by the large pupils of their eyes; there is reason to believe, that the hæmoptoe is immediately occasioned by the deficient absorption of the blood at the extremities

termities of the bronchial vein; and that one difficulty of healing the ulcers is occasioned by the deficient absorption of the fluids effused into them. See Sect. XXX. 1. and 2.

The difficulty of healing pulmonary ulcers may be owing, as its remote cause, to the incessant motion of all the parts of the lungs; whence no scab, or indurated mucus, can be formed so as to adhere on them. Whence these naked ulcers are perpetually exposed to the action of the air on their surfaces, converting their mild purulent matter into a contagious ichor; which not only prevents them from healing, but by its action on their circumferences, like the matter of itch or tinea, contributes to spread them wider. See the preceding article, and Sect. XXXIII. 2. 7. where the pulmonary phthisis is supposed to be infectious.

This acidifying principle is found in all the metallic calces, as in lapis calaminaris, which is a calciform ore of zinc; and in minium, which is a calx of lead; two materials which are powerful in healing excoriations and ulcers; in a short time, by their external application. How then does it happen, that the oxygen in the atmosphere should prevent pulmonary ulcers from healing, and even induce them to spread wider; and yet in its combination with metals, it should facilitate their healing? The healing of ulcers consists in promoting the absorption of the fluids effused into them, as treated of in Section XXXIII. 3. 2. Oxygen in combi-

nation with metals, when applied in certain quantity, produces this effect by its stimulus; and the metallic oxydes not being decomposed by their contact with animal matter, no new acid, or contagious material, is produced. So that the combined oxygen, when applied to an ulcer, simply I suppose promotes absorption in it, like the application of other materials of the articles sorbentia or incitantia, if applied externally; as opium, bark, alum. But in the pulmonary ulcers, which cannot protect themselves from the air by forming a scab, the uncombined oxygen of the atmosphere unites with the purulent matter, converting it into a contagious ichor; which by infection, not by erosion, enlarges the ulcers, as in the itch or tinea; which might hence, according to Dr. Beddoes's ingenious theory of consumption, be induced to heal, if exposed to an atmosphere deprived of a part of its oxygen. This I hope future experiments will confirm, and that the pneumatic medicine will alleviate the evils of mankind in many other, as well as in this most fatal malady.

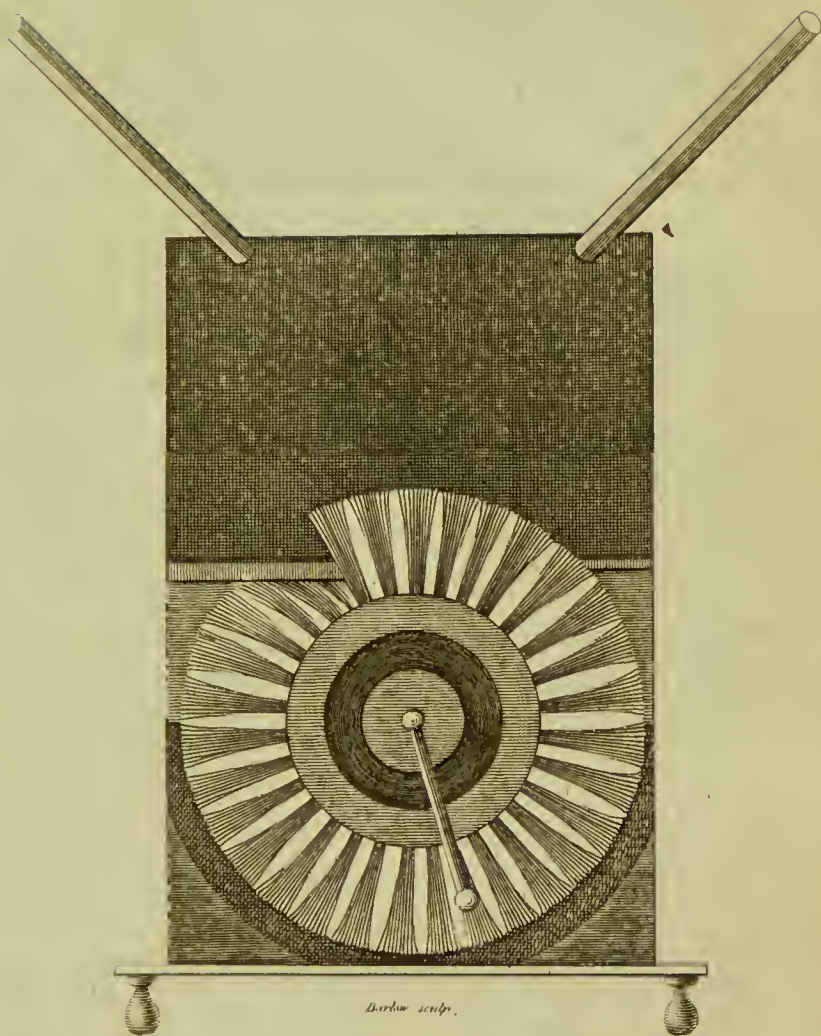
M. M. First, the respiration of air lowered by an additional quantity of azote, or mixed with some proportion of hydrogen, or of carbonic acid air, may be tried; as described in a late publication of Dr. Beddoes on the medicinal use of factitious airs. Johnson, London. Or lastly, by breathing a mixture of one-tenth part of hydrocarbonate mixed with common air, according to the discovery

covery of Mr. Watt, which has a double advantage in these cases, of diluting the oxygen of the atmospheric air, and inducing sickness, which increases pulmonary absorption, as mentioned below. An atmosphere diluted with fixed air (carbonic acid) might be readily procured by setting tubs of new wort, or fermenting beer, in the parlour and lodging-room of the patient. For it is not acids floating in the air, but the oxygen or acidifying principle, which injures or enlarges pulmonary ulcers by combining with the purulent matter.

Another easy method of adding carbonic acid gas to the air of a room, would be by means of an apparatus invented by Mr. Watt, and sold by Bolton and Watt, at Birmingham, as described in Dr. Beddoes' Treatise on Pneumatic Medicine. Johnson, London. It consists of an iron pot, with an arm projecting, and a method of letting water drop by slow degrees on chalk, which is to be put into the iron pot, and exposed to a moderate degree of heat over a common fire. By occasionally adding more and more chalk, carbonic acid gas might be carried through a tin pipe from the arm of the iron pot to any part of the room near the patient, or from an adjoining room. In the same manner a diffusion of solution of flowers of zinc might be produced and breathed by the patient, and would be likely much to contribute to the healing of pulmonary ulcers; as observed by Mr. Watt. See the treatise above mentioned.

Breathing over the vapour of caustic volatile alkali might easily be managed for many hours in a day; which might neutralize the acid poison formed on pulmonary ulcers by the contact of oxygen, and thus prevent its deleterious quality, as other acids become less caustic, when they are formed into neutral salts with alkalis. The volatile salt should be put into a tin canister, with two pipes like horns from the top of it, one to suck the air from, and the other to admit it.

Secondly, the external ulcers in scrofulous habits are pale and flabby, and naturally disinclined to heal, the deposition of fluids in them being greater than the absorption; these ulcers have their appearance immediately changed by the external application of metallic calxes, and the medicines of the article Sorbentia, such as cerussa and the bark in fine powder, see Class I. 2. 3. 21. and are generally healed in a short time by these means. Induced by these observations, I wished to try the external application of such powders to ulcers in the lungs, and constructed a box with a circulating brush in it, as described in the annexed plate; into this box two ounces of fine powder of Peruvian bark were put, and two drachms of cerussa in fine powder; on whirling the central brush, part of this was raised into a cloud of powder, and the patient, applying his mouth to one of the tin pipes rising out of the box, inhaled this powder twice a day into his lungs. I observed it did not produce any
cough



Durham sculp.

cough or uneasiness. This patient was in the last stage of consumption, and was soon tired of the experiment, nor have I had such patients as I wished for the repetition of it. Perhaps a fine powder of manganese, or of the flowers of zinc, or of lapis calaminaris, might be thus applied to ulcers of the lungs with greater advantage? Perhaps air impregnated with flowers of zinc in their most comminuted state, might be a better way of applying this powder to the lungs, as discovered by Mr. Watt. See Dr. Beddoes on Pneumatic Medicine. Johnson.

Thirdly, as the healing of an ulcer consists in producing a tendency to absorption on its surface greater than the deposition on it; see Sect. XXXIII. 3. 2. Other modes of increasing pulmonary absorption, which are perhaps more manageable than the preceding ones, may be had recourse to; such as by producing frequent nausea or sickness. See Sect. XXIX. 5. 1. and Art. IV. 2. The great and sudden absorption of fluid from the lungs in the anasarca pulmonum by the sickness induced by the exhibition of digitalis, astonishes those who have not before attended to it, by emptying the swelled limbs, and removing the difficulty of breathing in a few hours.

The most manageable method of using digitalis is by making a saturated tincture of it, by infusing two ounces of the powder of the leaves in a mixture of four ounces of rectified spirit of wine, and

four ounces of water. Of this from 30 to 60 drops, or upwards, from a two-ounce phial, are to be taken twice in the morning part of the day, and to be so managed as not to induce violent sickness. If sickness nevertheless comes on, the patient must for a day or two omit the medicine; and then begin it again in reduced doses.

Mr. —, a young man about twenty, with dark eyes, and large pupils, who had every symptom of pulmonary ulcers, I believed to have been cured by digitalis, and published the case in the Transactions of the College, Vol. III. But I heard, that about two years afterwards he relapsed and died. Mr. L—, a corpulent man, who had for some weeks laboured under a cough with great expectoration, with quick pulse, and difficulty of breathing, soon recovered by the use of digitalis taken twice a day; and though this case might probably be a peripneumonia notha, or catarrh, it is here related as shewing the power of pulmonary absorption excited by the use of this drug.

Since the publication of the above, some successful cases of the treatment of consumption by the tincture of digitalis are related in Medical and Physical Contributions, edited by Dr. Beddoes, Longman, London. Two of the successful cases are from Dr. Drake, who observes, “that by gradually increasing the dose of the saturated tincture of digitalis from 20 drops to 100 twice a day, all the symptoms of fever, cough, pain, and dyspnoea, daily

daily grew better, and at length totally ceased, and that on the quantity and quality of the expectorated matter the digitalis soon exerted a very remarkable effect, either promoting its absorption, or diminishing its secretion, or perhaps both, in a rapid manner; while at the same time it deprived it of its fetor." Many cases with great relief, or with prosperous event, are related by Dr. Fowler, and by Dr. Beddoes. One I have also lately seen myself, whom I believed to be consumptive, and who is of a consumptive family, and after having used the saturated tincture about six weeks, or two months, in various doses, is now believed by herself and friends to be perfectly restored to health, but there has not been time enough yet elapsed to determine, whether she may not relapse, now she discontinues the medicine.

Nevertheless as the digitalis has been given in many cases without success, there is reason to believe, that it should be taken early in the disease, before too great ulcerations are produced, and too great debility exists. As these patients are subject to flatter themselves more than most others, and are liable, on that account, not to apply soon enough for proper assistance, they should be warned that a cough attended with a pulse, that beats 120 times in a minute, is always a disease of danger.

Another method of inducing sickness, and pulmonary absorption in consequence, is by sailing on

the sea; by which many consumptive patients have been said to have received their cure; which has been erroneously ascribed to sea-air, instead of sea-sickness; whence many have been sent to breathe the sea-air on the coasts, who might have done better in higher situations, where the air probably contains less oxygen gas, which is the heaviest part of it. See a Letter from Dr. J. C. below.

A third method of inducing sickness, and consequent pulmonary absorption, is by the vertigo occasioned by swinging; which has lately been introduced into practice by Dr. Smith, (Essay on Pulmonary Consumption), who observed that by swinging the hectic pulse became slower, which is explained in Class IV. 2. 1. 10. The usual way of reciprocating swinging, like the oscillations of a pendulum, produces a degree of vertigo in those, who are unused to it; but to give it greater effect, the patient should be placed in a chair suspended from the ceiling by two parallel cords in contact with each other, the chair should then be forcibly revolved 20 or 40 times one way, and suffered to return spontaneously; which induces a degree of sickness in most adult people, and is well worthy an exact and pertinacious trial, for an hour or two, three or four times a day for a month.

The common means of promoting absorption in ulcers, and of thickening the matter in consequence, by taking the bark and opium internally,

or by metallic salts, as of mercury, steel, zinc, and copper, in small quantities, have been repeatedly used in pulmonary consumption; and may have relieved some of the symptoms. As mercury cures venereal ulcers, and as pulmonary ulcers resemble them in their not having a disposition to heal, and in their tendency to enlarge themselves, there were hopes, from analogy, that it might have succeeded. Would a solution of gold in aqua regia be worth trying? When vinegar is applied to the lips, it renders them instantly pale, by promoting the venous absorption; if the whole skin was moistened with warmish vinegar, would this promote venous absorption in the lungs by their sympathy with the skin? The very abstemious diet on milk and vegetables alone is frequently injurious. Flesh-meat once a day, with small wine and water, or small beer, is preferable. Half a grain of opium twice a day, or a grain, I believe to be of great use at the commencement of the disease, as appears from the subsequent case.

Miss —, a delicate young lady, of a consumptive family, when she was about eighteen, had frequent cough, with quick pulse, a pain of her side, and the general appearances of a beginning consumption. She took about five drops of laudanum twice a day in a saline draught, which was increased gradually to ten. In a few weeks she recovered, was afterwards married, bore three

or four children, and then became consumptive and died.

The following case of hereditary consumption is related by a physician of great ability and very extensive practice; and, as it is his own case, abounds with much nice observation and useful knowledge; and, as it has been attended with a favourable event, may give consolation to many, who are in a similar situation; and shews that Sydenham's recommendation of riding as a cure for consumption is not so totally ineffectual, as is now commonly believed.

J. C. aged 27, with black hair, and a ruddy complexion, was subject to cough from the age of puberty, and occasionally to spitting of blood. His maternal grandfather died of consumption under thirty years of age, and his mother fell a victim to this disease, with which she had long been threatened, in her 43d year, and immediately after she ceased to have children. In the severe winter of 1783-4, he was much afflicted with cough; and being exposed to intense cold, in the month of February he was seized with peripneumony. The disease was violent and dangerous, and after repeated bleedings as well as blisterings, which he supported with difficulty, in about six weeks he was able to leave his bed. At this time the cough was severe, and the expectoration difficult. A fixed pain remained on the left side, where

where an issue was inserted; regular hectic came on every day about an hour after noon, and every night heat and restlessness took place, succeeded towards morning by general perspiration.

The patient, having formerly been subject to ague, was struck with the resemblance of the febrile paroxysm, with what he had experienced under that disease, and was willing to flatter himself it might be of the same nature. He therefore took bark in the interval of fever, but with an increase of his cough, and this requiring venesection, the blood was found highly inflammatory. The vast quantity of blood which he had lost from time to time, produced a disposition to fainting, when he resumed the upright posture, and he was therefore obliged to remain almost constantly in a recumbent position. Attempting to ride out in a carriage, he was surprised to find that he could sit upright for a considerable time, while in motion, without inconvenience, though, on stopping the carriage, the disposition to fainting returned.

At this time, having prolonged his ride beyond the usual length, he one day got into an uneven road at the usual period of the recurrence of the hectic paroxysms, and that day he missed it altogether. This circumstance led him to ride out daily in a carriage at the time the febrile accession might be expected, and sometimes by this means it was prevented, sometimes deferred, and almost always mitigated.

This

This experience determined him to undertake a journey of some length, and Bristol being, as is usual in such cases, recommended, he set out on the 19th of April, and arrived there on the 2d of May. During the greater part of this journey (of 175 miles) his cough was severe, and being obliged to be bled three different times on the road, he was no longer able to sit upright, but at very short intervals, and was obliged to lie at length in the diagonal of a coach. The hectic paroxysms were not interrupted during the journey, but they were irregular and indistinct, and the salutary effects of exercise, or rather of gestation, were impressed on the patient's mind.

At Bristol he stayed a month, but reaped no benefit. The weather was dry and the roads dusty; the water insipid and inert. He attempted to ride on horseback on the downs, but was not able to bear the fatigue for a distance of more than a hundred yards. The necessity of frequent bleedings kept down his strength, and his hectic paroxysms continued, though less severe. At this time, suspecting that his cough was irritated by the west-winds bearing the vapour from the sea, he resolved to try the effects of an inland situation, and set off for Matlock in Derbyshire.

During the journey he did not find the improvement he expected, but the nightly perspirations began to diminish; and the extraordinary fatigue he experienced proceeded evidently from his travelling

velling in a post-chaise, where he could not indulge in a recumbent position. The weather at Bristol had been hot, and the earth arid and dusty. At Matlock, during the month of June 1784, there was almost a perpetual drizzle, the soil was wet, and the air moist and cold. Here, however, the patient's cough began to abate, and at intervals he found an opportunity of riding more or less on horseback. From two or three hundred yards at a time, he got to ride a mile without stopping; and at length he was able to sit on horseback during a ride from Mason's Bath to the village of Matlock along the Derwent, and round on the opposite banks, by the works of Mr. Arkwright, back to the house whence he started, a distance of five miles. On dismounting, however, he was seized with diliquium, and soon after the strength he had recovered was lost by an attack of the hæmorrhoids of the most painful kind, and requiring much loss of blood from the parts affected.

On reflection, it appeared that the only benefit received by the patient was during motion, and continued motion could better be obtained in the course of a journey than during his residence at any particular place. This, and other circumstances of a private but painful nature, determined him to set out from Matlock on a journey to Scotland. The weather was now much improved, and during the journey he recruited his strength. Though as yet he could not sit upright at rest for
half

half an hour together without a disposition to giddiness, dimness of sight, and deliquium, he was able to sit upright under the motion of a post-chaise during a journey of from 40 to 70 miles daily, and his appetite began to improve. Still his cough continued, and his hectic flushings, though the chills were much abated and very irregular.

The salutary effects of motion being now more striking than ever, he purchased a horse admirably adapted to a valetudinarian in Dumfriesshire, and being now able to sit on horseback for an hour together, he rode out several times a day. He fixed his residence for a few weeks at Moffat, a village at the foot of the mountains whence the Tweed, the Clyde, and the Annan, descend in different directions; a situation inland, dry, and healthy, and elevated about three hundred feet above the surface of the sea. Here his strength recovered daily, and he began to eat animal food, which for several months before he had not tasted. Persevering in exercise on horseback, he gradually increased the length of his rides, according to his strength, from four to twenty miles a day; and returning on horseback to Lancashire by the lakes of Cumberland, he arrived at Liverpool on the first of September, having rode the last day of his journey forty miles.

The two inferences of most importance to be drawn from this narrative, are, first, the extraordinary

nary benefit derived from gestation in a carriage, and still more the mixture of gestation and exercise on horseback, in arresting or mitigating the hectic paroxysm; and secondly, that in the florid consumption, as Dr. Beddoes terms it, an elevated and inland air is in certain circumstances peculiarly salutary; while an atmosphere loaded with the spray of the sea is irritating and noxious. The vicinity of the sea appears very injurious to almost all vegetables, and should on that account be suspected in respect to its general salubrity, though it may nevertheless be medicinal in some diseases, if resorted to for a time in the summer months, but must be ineligible as a permanent residence. See Class I. 2. 1. 15.

The benefit derived in this case from exercise on horseback, may lead us to doubt whether Sydenham's praise of this remedy be as much exaggerated as it has of late been supposed. Since the publication of Dr. C. Smyth on the effects of swinging in lowering the pulse in the hectic paroxysm, the subject of this narrative has repeated his experiments in a great variety of cases, and has confirmed them. He has also repeatedly seen the hectic paroxysm prevented, or cut short, by external ablution of the naked body with tepid water.

So much was his power of digestion impaired or vitiated by the immense evacuations, and the long continued debility he underwent, that after

the cough was removed, and indeed for several years after the period mentioned, he never could eat animal food without heat and flushing, with frequent pulse and extreme drowsiness. If this drowsiness was encouraged, the fever ran high, and he awoke from disturbed sleep, wearied and depressed. If it was resolutely resisted by gentle exercise, it went off in about an hour, as well as the increased frequency of the pulse. This agitation was however such as to incapacitate him during the afternoon for study of any kind. The same effects did not follow a meal of milk and vegetables, but under this diet his strength did not recruit; whereas after the use of animal food it recovered rapidly, notwithstanding the inconvenience already mentioned. For this inconvenience he at last found a remedy in the use of coffee immediately after dinner, recommended to him by his friend Dr. Percival. At first this remedy operated like a charm, but by frequent use, and indeed by abuse, it no longer possesses its original efficacy.

Dr. Falconer, in his Dissertation on the Influence of the Passions and Affections of the Mind on Health and Disease, supposes that the cheerfulness which attends hectic fever, the ever-springing hope, which brightens the gloom of the consumptive patient, increases the diseased actions, and hastens his doom. And hence he is led to inquire, whether the influence of fear might not be substituted

substituted in such cases to that of hope with advantage to the patient? This question I shall not presume to answer, but it leads me to say something of the state of the mind in the case just related.

The patient, being a physician, was not ignorant of his danger, which some melancholy circumstances served to impress on his mind. It has already been mentioned, that his mother and grandfather died of this disease. It may be added, that in the year preceding that on which he himself was attacked, a sister of his was carried off by consumption in her 17th year; that in the same winter in which he fell ill, two other sisters were seized with the same fatal disorder, to which one of them fell a victim during his residence at Bristol, and that the hope of bidding a last adieu to the other was the immediate cause of his journey to Scotland, a hope which, alas! was indulged in vain. The day on which he reached the end of his journey, her remains were committed to the dust! It may be conjectured from these circumstances, that whatever benefit may be derived from the apprehension of death, must in this case have been obtained. The expectation of this issue was indeed for some time so fixed that it ceased to produce much agitation; in conformity to that general law of our nature, by which almost all men submit with composure to a fate that is foreseen, and that appears inevitable. As however the

progress of disease and debility seemed to be arrested, the hope and the love of life revived, and produced, from time to time, the observations and the exertions already mentioned.

Wine and beer were rigorously abstained from during six months of the above history; and all the blood, which was taken, was even to the last buffy. Feb. 3, 1795.

It has lately been asserted, that the people of Holland are less liable to consumption of the lungs, than those of many other parts of Europe, which has been ascribed to their warmer clothing. I am aware of the difficulty of making such estimates with any great degree of certainty, but if such be the fact, it may indeed be ascribed with some degree of probability to their using very warm clothing, but not very warm rooms during the winter season. Whence the lungs are not so much exposed to the great and sudden transition from very warm rooms into frosty air, as in this country. And though the lungs have not a sensation of cold or of chiliness like the external skin, in passing from very warm air into great cold, often much below the freezing point, yet they are liable to inflammation, like other parts of the system. But to this may be objected, that the hereditary pulmonary consumption attacks the patient so infallibly a few years after puberty, that it does not appear to depend much on external circumstances.

8. *Febris scrofulosa*. The hectic fever occasioned by ulcers of the lymphatic glands, when exposed to the air, does not differ from that attending pulmonary consumption, being accompanied with night-sweats and occasional diarrhœa.

M. M. The bark. Opium internally. Externally cerussa and bark in fine powder. Bandage. Sea-bathing. See Class I. 2. 3. 21. and II. 1. 4. 12.

9. *Febris ischiadica*. A hectic fever from an open ulcer between the muscles of the pelvis, which differs not from the preceding. If the matter in this situation lodges till part of it, I suppose, becomes putrid, and aerates the other part; or till it becomes absorbed from some other circumstance; a similar hectic fever is produced, with night-sweats, or diarrhœa.

Mrs. —, after a lying in, had pain on one side of her loins, which extended to the internal part of the thigh on the same side. No fluctuation of matter could be felt; she became hectic with copious night-sweats, and occasional diarrhœa, for four or five weeks; and recovered by, I suppose, the total absorption of the matter, and the reunion of the walls of the abscess. See Class II. 1. 2. 18.

10. *Febris Artropuodica*. Fever from the matter of diseased joints. Does the matter from sup-
I i 2
purating

purating bones, which generally has a very putrid smell, produce hectic fever or typhus? See Class II. 1. 4. 16.

11. *Febris a pure contagioſo.* Fever from contagious pus. When the contagious matters have been produced on the external habit, and in proceſs of time become abſorbed, a fever is produced in conſequence of this reabſorption; which differs with the previous irritability or inirritability, as well as with the ſenſibility of the patient.

12. *Febris varioloſa ſecundaria.* Secondary fever of ſmall-pox. In the diſtinct ſmall-pox the fever is of the ſenſitive irritated or inflammatory kind; in the confluent ſmall-pox it is of the ſenſitive inirritated kind, or typhus gravior. In both of them the ſwelling of the face, when the matter there begins to be abſorbed, and of the hands, when the matter there begins to be abſorbed, ſhew, that it ſtimulates the capillary veſſels or glands, occaſioning an increaſed ſecretion greater than the abſorbents can take up, like the action of the cantharides in a bliſter; now as the application of a bliſter on the ſkin frequently occaſions the ſtrangury, which ſhews, that ſome part of the cantharides is abſorbed; there is reaſon to conclude, that a part of the matter of ſmall-pox is abſorbed, and thus produces the ſecondary fever. See Class II. 1. 3. 9. And not ſimply by its ſtimulus

mulus on the surface of the ulcers beneath the scabs. The exudation of a yellow fluid from beneath the confluent eruptions on the face before the height is spoken of in Class II. 1. 3. 2.

The material thus absorbed in the secondary fever of small-pox differs from that of open ulcers, as it is only aerated through the elevated cuticle; and secondly, because there is not a constant supply of fresh matter, when that already in the pustules is exhausted, either by absorption, or by evaporation, or by its induration into a scab. Might not the covering the face assiduouſly and exactly with plasters, as with cerate of calamy, or with minium plaster, by precluding the air from the pustules, prevent their contracting a contagious, or acceſcent, or fever-producing power? and the secondary fever be thus prevented entirely. If the matter in those pustules on the face in the confluent small-pox were thus prevented from oxygenation, it is highly probable, both from this theory, and from the facts before mentioned, that the matter would not erode the skin beneath them, and by these means no marks or scars would succeed.

13. *Febris carcinomatosa*. Fever from the matter of cancer. In a late publication the pain is said to be relieved, and the fever cured, and the cancer eradicated, by the application of carbonic acid gas, or fixed air. See Class II. 1. 4. 16.

14. *Febris venerea*. From the absorption of the matter from venereal ulcers and suppurating bones. See Syphilis, II. 1. 5. 2.

M. M. Any mercurial calx. Sarsaparilla? Mezezon?

15. *Febris a sanie putrida*. Fever from putrid sanies. When parts of the body are destroyed by external violence, as a bruise, or by mortification, a putrefaction soon succeeds; as they are kept in that degree of warmth and moisture, by their adhesion to the living parts of the body, which most forwards that process. Thus the sloughs of mortified parts of the tonsils give fetor to the breath in some fevers; the matter from putrefying teeth, or other suppurating bones, is particularly offensive; and even the scurf, which adheres to the tongue, frequently acquires a bitter taste from its incipient putridity. This material differs from those before mentioned, as its deleterious property depends on a chemical rather than an animal process.

16. *Febris puerpera*. Puerperal fever. It appears from some late dissections, which have been published, of those women who have died of the puerperal fever, that matter has been formed in the omentum, and found in the cavity of the abdomen, with some blood or sanies. These parts are supposed to have been injured by the exertions accompanying labour; and as matter in this viscus
may

may have been produced without much pain, this disease is not attended with arterial strength and hard full pulse, like the inflammation of the uterus; and as the fever is of the inirritative or typhus kind, there is reason to believe, that the previous exhaustion of the patient during labour may contribute to its production; as well as the absorption of a material not purulent but putrid; which is formed by the delay of extravasated or dead matter produced by the bruises of the omentum, or other viscera, in the efforts of parturition, rather than by purulent matter, the consequence of supuration. The pulse is generally about 120 when in bed, and in the morning; and is increased to 134, or more, when the patient sits up, or in the evening paroxysm. The pulse of all very weak patients increases in frequency when they sit up; because the expenditure of sensorial power necessary to preserve an erect posture deducts so much from their general strength; and hence the pulse becomes weaker, and in consequence quicker. See Sect. XII. 1. 4.

Whence I suspect, that the puerperal fever is distinguished from the hectic fever, by the former being produced and supported by the absorption of a putrid sanies, arising from dead parts of the omentum or mesentery; and the latter being produced and supported by the absorption of purulent matter, which is the consequence of inflammation, after it has been oxygenated by ex-

posure to the air: and that hence they differ in the greater debility, and consequent quicker pulse, and more rapid progress of the former than the latter; but agree, in the few patients which I have attended, in the circumstance of the patients bearing the quantity of these fevers better than the typhus, as is seen in their frequent rising from their beds for hours, and even attending to their occupations with a pulse of more than 120 in a minute; and also in another important circumstance, which is, that they take solid food, as bread, and eggs, and oysters; and even chicken, in great quantities; which in the irritative fever, or typhus, is refused during the whole course of the disease. And hence it seems probable; that the cause or commencement of the irritative fever, or typhus, may have been from the torpor or paralysis of the stomach, owing to the swallowing of contagious matter along with our saliva; and the actions of the heart suffer in consequence from sympathy. And that hence these three kinds of fever may be distinguished from each other: the typhus, by the total loss of appetite for solid food; the hectic fever, by the pulse being seldom above 120, and with attendant inflammation; and the puerperal fever, by a quicker and weaker pulse; but both the latter existing without the inability to take some solid nourishment.

In this fever time must be allowed for the absorption of the matter. Very large and repeated quantities

quantities of the bark, by preventing sufficient food from being taken, as bread, and wine, and water, I have thought, have much injured the patient; for the bark is not here given, as in intermittent fevers, to prevent the paroxysm, but simply to strengthen the patient by increasing the power of digestion. About two ounces of decoction of bark, with four drops of laudanum, and a drachm of sweet spirit of vitriol, once in six hours, and a glass of wine between those times, with panada, or other food, I have thought of most advantage, with a small blister occasionally.

Where not only the stomach but also the bowels are much distended with air, so as to sound on striking them with the fingers, the case is always dangerous, generally hopeless; which is more so in proportion to the quickness of the pulse. Where the bowels are distended two drops of oil of cinnamon should be given in the panada three or four times a day, with ten grains of alum.

In one case of puerperal fever, which lasted above forty days, and was attended for the last fortnight with perpetual subfultus of the tendons, and even twitching of the hands with unceasing delirium, and inability to sleep, musk given in the dose of ten grains every six hours, with five drops of tincture of opium, seemed to be of service; and when the abdomen became tumid with air, about the 36th day from the commencement of the fever, alum given in doses of about seven grains every

every three hours, seemed of uncommon service, as the tumor of the abdomen much subsided in one day, and the patient immediately became able to sleep two or three hours at a time; but the event of the disease was fatal.

In this situation I suppose the fever to have been kept up by the absorption of a putrid material in the abdomen, on the outside of the intestines; and as alum instantaneously destroys the volatile alkali which occasions a part of the smell, and perhaps the whole of the gas of putrid matter; which alkali precipitates the argillaceous earth from the vitriolic acid; I suppose this effect would be produced by alum, though it might not be produced by vitriolic acid, as the latter would unite with the contents of the stomach; but the alum would not unite with any thing, till it became exposed to exhalations of putrid matter. See Class II. 1. 3. 1. Might not a puncture by a lancet into the tumid abdomen, through the scar of the navel, be of use, when it is much distended with air?

The want of sleep was owing to debility, and ceased when that became lessened. As some motions of the hands were the consequence of her delirious ideas, these became tremulous, like the hands of very old men, or drunkards, from debility, whenever they were exerted.

A very interesting account of the puerperal fever, which was epidemic at Aberdeen, has been

lately published by Dr. Alexander Gordon. (Robinsons, London.) In several dissections of those who died of this disease, purulent matter was found in the cavity of the abdomen; which he ascribes to an erysipelatous inflammation of the peritonæum, as its principal feat, and of its productions, as the omentum, mesentery, and peritonæal coat of the intestines.

He believes, that it was infectious, and that the contagion was always carried by the accoucheur, or the nurse, from one lying-in woman to another.

The disease began with violent unremitting pain of the abdomen on the day of delivery, or the next day, with shuddering, and very quick pulse, often 140 in a minute. In this situation, if he saw the patient within 12 or 24 hours of her seizure, he took away from 16 to 24 ounces of blood, which was always fizy. He then immediately gave a cathartic, consisting of three grains of calomel, and forty grains of powder of jalap. After this had operated, he gave an opiate at night; and continued the purging and the opiate for several days.

He asserts, that almost all those, whom he was permitted to treat in this manner early in the disease, recovered, to the number of 50; and that almost all the rest died. But that when two or three days were elapsed, the patient became too
weak

weak for this method ; and the matter was already formed, which destroyed them. Except that he saw two patients who recovered, after discharging a large quantity of matter at the navel. And a few who were relieved, by the appearance of external erysipelas on the extremities.

This disease, consisting of an erysipelatous inflammation, may occasion the great debility sooner to occur than in inflammation of the uterus ; which latter is neither erysipelatous, I suppose, nor contagious. And the success of Dr. Gordon's practice seems to correspond with that of Dr. Rush, in the contagious fever or plague at Philadelphia ; which appeared to be much assisted by early evacuations. One case I saw, some time ago, where violent unceasing pain of the whole abdomen occurred, a few hours after delivery, with quick pulse ; which ceased after the patient had twice lost about eight ounces of blood, and had taken a moderate cathartic with calomel.

This case induces me to think, that it might be safer, and equally efficacious, to take less blood at first than Dr. Gordon mentions, and to repeat the operation in a few hours, if the continuance of the symptoms should require it. And the same in respect to the cathartic, which might perhaps be given in less quantity, and repeated every two or three hours.

Nor should I wish to give an opiate after the
first

first venesection and cathartic; as I suspect that this might be injurious, except those evacuations had emptied the vessels so much, that the stimulus of the opiate should act only by increasing the absorption of the new vessels or fluids produced on the surfaces of the inflamed membranes. In other inflammations of the bowels, and in acute rheumatism, I have seen the disease much prolonged, and I believe sometimes rendered fatal, by the too early administration of opiates, either along with cathartics, or at their intervals; while a small dose of opium given after sufficient evacuations produces absorption only by its stimulus, and much contributes to the cure of the patient. We may have visible testimony of this effect of opium, when a solution of it is put into an inflamed eye; if it be thus used previous to sufficient evacuation, it increases the inflammation; if it be used after sufficient evacuation, it increases absorption only, and clears the eye in a very small time.

I cannot omit observing, from considering these circumstances, how unwise is the common practice of giving an opiate to every woman immediately after her delivery, which must often have been of dangerous consequence.

17. *Febris a sphacelo.* Fever from mortification. This fever from absorption of putrid matter is

is of the inirritative or typhus kind. See the preceding article.

M. M. Opium and the bark are frequently given in too great quantity, so as to induce consequent debility, and to oppress the power of digestion.

ORDO I.

Increased Sensation.

GENUS VII.

With increased Action of the Organs of Sense.

SPECIES.

1. *Delirium febrile.* Paraphrosyne. The ideas in delirium consist of those excited by the sensation of pleasure or pain, which precedes them, and the trains of other ideas associated with these; and not of those excited by external irritations or by voluntary exertion. Hence the patients do not know the room which they inhabit, or the people who surround them; nor have they any voluntary exertion, where the delirium is complete; so that their efforts in walking about a room or rising from their bed are unsteady, and produced by their catenations with the immediate affections of pleasure or pain. See Section XXXIII. 1. 4.

By the above circumstances it is distinguished from madness, in which the patients well know the persons of their acquaintance, and the place where they are; and perform all the voluntary actions with steadiness and determination. See Sect. XXXIV. 2. 2.

Delirium

Delirium is sometimes less complete, and then a new face and louder voice stimulate the patient to attend to them for a few moments; and then they relapse again into perfect delirium. At other times a delirium affects but one sense, and the person thinks he sees things which do not exist; and is at the same time sensible to the questions which are asked him, and to the taste of the food which is offered to him.

This partial delirium is termed a hallucination of the disordered organ; and may probably arise from the origin of one nerve of sense being more liable to inflammation than the others; that is, an exuberance of the sensorial power of sensation may affect it; which is therefore thrown into action by slighter sensitive catenations, without being obedient to external stimulus, or to the power of volition.

The perpetual flow of ideas in delirium is owing to the same circumstance, as of those in our dreams; namely, to the defect or paralysis of the voluntary power; as in hemiplegia, when one side of the body is paralytic, and thus expends less of the sensorial power, the limbs on the other side are in constant motion from the exuberance of it. Whence less sensorial power is exhausted in delirium, than at other times, as well as in sleep; and hence in fevers with great debility, it is perhaps, as well as the stupor, rather a favourable circumstance; and when removed by numerous blisters,

blisters, the death of the patient often follows the recovery of his understanding. See Class I. 2. 5. 6. and I. 2. 5. 10.

Delirium in diseases from inirritability is sometimes preceded by a propensity to surprise. See Class I. 1. 5. 12.

M. M. Fomentations of the shaved head for an hour repeatedly. A blister on the head. Rising from bed. Wine and opium, and sometimes venesection in small quantity by cupping, if the strength of the arterial system will allow it.

2. *Delirium maniacale.* Maniacal delirium. There is another kind of delirium, described in Sect. XXXIII. 1. 4. which has the increase of pleasurable or painful sensation for its cause, without any diminution of the other sensorial powers; but as this excites the patient to the exertion of voluntary actions, for the purpose of obtaining the object of his pleasurable ideas, or avoiding the object of his painful ones, such as perpetual prayer, when it is of the religious kind; it belongs to the insanities described in Class III. 1. 2. 1. and is more properly termed *hallucinatio maniacalis*.

3. *Delirium ebrietatis.* The drunken delirium is in nothing different from the delirium attending fevers except in its cause, as from alcohol, or other poisons. When it is attended with an apoplectic stupor, the pulse is generally low; and venesection I

believe sometimes destroys those, who would otherwise have recovered in a few hours.

M. M. Diluting liquids. An emetic.

4. *Somnium*. Dreams constitute the most complete kind of delirium. As in these no external irritations are attended to, and the power of volition is entirely suspended; so that the sensations of pleasure and pain, with their associations, alone excite the endless trains of our sleeping ideas; as explained in Sect. XVIII. on Sleep.

5. *Hallucinatio visûs*. Deception of sight. These visual hallucinations are perpetual in our dreams; and sometimes precede general delirium in fevers; and sometimes belong to reverie, and to insanity. See Class III. 1. 2. 1. and 2. and must be treated accordingly.

Other kinds of visual hallucinations occur by moon-light; when objects are not seen so distinctly as to produce the usual ideas associated with them, but appear to us exactly as they are seen. Thus the trunk of a tree appears a flat surface, instead of a cylinder as by day, and we are deceived and alarmed by seeing things as they really are seen. See Berkley on Vision.

6. *Hallucinatio auditûs*. Auricular deception frequently occurs in dreams, and sometimes precedes general delirium in fevers; and sometimes belongs to

to vertigo, and to reverie, and to insanity. See Sect. XX. 7. and Class III. I. 2. I. and 2.

7. *Rubor a calore.* The blush from heat is occasioned by the increased action of the cutaneous vessels in consequence of the increased sensation of heat. See Class I. I. 2. I. and 3.

8. *Rubor jucunditatis.* The blush of joy is owing to the increased action of the capillary arteries, along with that of every moving vessel in the body, from the increase of pleasurable sensation.

9. *Priapismus amatorius.* Amatorial priapism. The blood is poured into the cells of the corpora cavernosa much faster than it can be reabsorbed by the vena penis, owing in this case to the pleasurable sensation of love increasing the arterial action. See Class I. I. 4. 6.

10. *Distentio mamularum.* The teats of female animals, when they give suck, become rigid and erected, in the same manner as in the last article, from the pleasurable sensation of the love of the mother to her offspring. Whence the teat may properly be called an organ of sense. The nipples of men do the same when rubbed with the hand. See Class I. I. 4. 7.

ORDO II.

Decreased Sensation.

GENUS I.

Of the General System.

SPECIES.

1. *Stultitia insensibilis.* Folly from insensibility. The pleasure or pain generated in the system is not sufficient to promote the usual activity either of the sensual or muscular fibres.

2. *Tedium vitæ.* Ennui. Irksomeness of life. The pain of laziness has been thought by some philosophers to be that principle of action, which has excited all our industry, and distinguished mankind from the brutes of the field. It is certain that, where the ennui exists, it is relieved by the exertions of our minds or bodies, as all other painful sensations are relieved; but it depends much upon our early habits, whether we become patient of laziness, or inclined to activity, during the remainder of our lives, as other animals do not appear to be affected with this malady; which is perhaps less owing to deficiency of the pleasurable sensation, than to the superabundancy of voluntary

luntary power, which occasions pain in the muscles by its accumulation; as appears from the perpetual motions of a squirrel confined in a cage.

3. *Paresis sensitiva.* Weakness of the whole system from insensibility.

ORDO II.

Decreased Sensation.

GENUS II.

Of particular Organs.

SPECIES.

1. *Anorexia.* Want of appetite. Some elderly people, and those debilitated by fermented liquors, are liable to lose their appetite for animal food; which is probably in part owing to the deficiency of gastric acid, as well as to the general decay of the system: elderly people will go on years without animal food; but inebriates soon sink, when their digestion becomes so far impaired. Want of appetite is sometimes produced by the putrid matter from many decaying teeth being perpetually mixed with the saliva, and thence affecting the organs of taste, and greatly injuring the digestion.

M. M. Fine charcoal powder diffused in warm water, held in the mouth frequently in a day, as in Class I. 1. 4. 4. or solution of alum in water. Extract the decayed teeth. An emetic. A blister. Chalybeates. Vitriolic acid. Bile of an ox inspissated, and made into pills; 20 grains to be taken before dinner and supper. Opium half a grain twice a day.

All the strength we possess is ultimately derived from the food, which we are able to digest; whence a total debility of the system frequently follows the want of appetite, and of the power of digestion. Some young ladies I have observed to fall into this general debility, so as but just to be able to walk about; which I have sometimes ascribed to their voluntary fasting, when they believed themselves too plump; and who have thus lost both their health and beauty by too great abstinence, which could never be restored.

Two young ladies applied to me, who had experienced many months of great debility, and of almost total want of appetite, from another cause, which was from bathing on a warm day in a cold fountain of water, which was covered from the sun and supplied by a powerful spring; but gradually afterwards recovered their health by the use of six grains of rhubarb with one grain of opium every night for some weeks, and a bitter draught twice a day with a slight chalybeate. See Class III. 2. 1. 17.

I have seen other cases of what may be termed anorexia epileptica, in which a total loss of appetite, and of the power of digestion, suddenly occurred along with epileptic fits. Miss B. a girl about eighteen, apparently very healthy, and rather plump, was seized with fits, which were at first called hysterical; they occurred at the end of menstruation, and returned very frequently with total loss of appetite. She was relieved by venesection, blisters, and opiates; her strength diminished,

nished, and after some returns of the fits, she took to her bed, and has survived 15 or 20 years; she has in general eaten half a potato a day, and seldom speaks, but retains her senses, and had many years occasional returns of convulsion. I have seen two similar cases, where the anorexia, or want of appetite, was in less degree; and but just so much food could be digested, as supplied them with sufficient strength to keep from the bed or sofa for half a day. As well as I can recollect, all these patients were attended with weak pulse, and cold pale skin; and received benefit by opium, from a quarter of a grain to a grain four times a day. See Class III. 1. 1. 7. and III. 1. 2. 20. and Suppl. I. 14. 3.

2. *Adipsia*. Want of thirst. Several of the inferior people, as farmers wives, have a habit of not drinking with their dinner at all, or only take a spoonful or two of ale after it. I have frequently observed these to labour under bad digestion, and debility in consequence; which I have ascribed to the too great stimulus of solid food undiluted, destroying in process of time the irritability of the stomach.

3. *Impotentia* (agenesia). Impotency much seldom happens to the male sex than sterility to the female sex. Sometimes a temporary impotence occurs from bashfulness, or the interference of some voluntary exertion in the production of

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an effect, which should be performed alone by pleasurable sensation.

One, who was soon to be married to a lady of superior condition to his own, expressed fear of not succeeding on the wedding night ; he was advised to take a grain of opium before he went to bed, and to accustom himself to sleep with a woman previously, but not to enjoy her, to take off his bashfulness ; which succeeded to his wish.

Mr. John Hunter in his work on the Venereal Disease, has given an ingenious section on this subject of mental impotence, in which he relates a successful mode of treatment. He prevailed on a person in this situation to promise on his honour to pass six nights in bed with a young woman without attempting to have connection with her, whatever might be his power or inclination. He afterwards assured Mr. Hunter, that this resolution had produced such a total alteration in the state of his mind, that the power of connection soon recurred, for instead of going to bed with the fear of inability ; he went with fears, that he should be possessed with too much desire, and too much power, so as to become uneasy to him, which really happened, as he would have been happy to have shortened the time ; and when he had once broken the spell, his mind and powers went on together ; and his mind never returned to its former state.

A gentleman about 50 years of age, who had lived too freely, as he informed me, both in respect
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to wine and women, complained, that his desire for the sex remained, and that he occasionally parted with semen, but with defect of a perfect tensio penis, and that he had tried 20 drops of laudanum, and 20 drops of tincture of cantharides on going to bed without effect; and that as the debility or inirritability of the system in this case rather than any mental affection seemed to be a part of the cause, he was advised to stimulate the sphincter ani by the introduction of a piece of the root of ginger, as is done by the horse-dealers to sale-horses. And, however ridiculous the operation may appear, he assured me, that it succeeded; which I suppose might be owing to the sympathy between the sphincter ani and the penis; which is so often the cause of painful sensation in the former, when a stone at the neck of the bladder affects the latter; and conversely when painful piles affect the rectum, a strangury is sometimes produced by sympathy.

For restoring the venereal power M. Le Roy thinks phosphorus taken in the dose of a quarter of a grain rubbed with oil or yolk of egg, or honey; or even the acid of phosphorus, to possess great efficacy. Med. Review, Vol. V. p. 204. The water in which phosphorus has been kept some time, probably possesses some of this acid, and is also recommended by M. Le Roy. I ought here to add, that I have been lately informed, that a gentleman directed four grains of phosphorus to
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be made into pills with conserve, with design of increasing his venereal power. He was seized with intolerable sense of heat at his stomach, pulse feeble, but not quickened, livid countenance, foreness of his bowels to the touch, and incessant vomitings, by which he at last brought up some blood. His illness lasted five or six days. He did not acknowledge any cause of his sudden illness, but said he was certain emetics would cure him, and took two by his own request. After his death, the apothecary mentioned his having directed the pills as above, which were made three days before he was taken ill; and he was believed to have taken about half of them.

M. M. Chalybeates. Opium. Bark. Tincture of cantharides.

4. *Sterilitas*. Barrenness. One of the ancient medical writers asserts, that the female sex become pregnant with most certainty at or near the time of menstruation. This is not improbable, since these monthly periods seem to resemble the monthly venereal orgasm of some female quadrupeds, which become pregnant at those times only; and hence the computation of pregnancy is not often erroneous, though taken from the last menstruation. See Section XXXVI. 2. 3.

M. M. Opium a grain every night. Chalybeates in very small doses. Bark. Sea-bathing.

5. *Insensibilitas*

5. *Insensibilitas artuum.* As in some paralytic limbs. A great insensibility sometimes accompanies the torpor of the skin in cold fits of agues. Some parts have retained the sense of heat, but not the sense of touch. See Sect. XVI. 6.

M. M. Friction with flannel. A blister. Warmth.

6. *Dysuria insensitiva.* Insensibility of the bladder. A difficulty or total inability to make water attends some fevers with great debility, owing to the insensibility or inirritability of the bladder. This is a dangerous but not always a fatal symptom. See Class III. 2. 1. 6.

M. M. Draw off the water with a catheter. Assist the patient in the exclusion of it by compressing the lower parts of the abdomen with the hands. Wine two ounces, Peruvian bark one dram in decoction, every three hours alternately. Balsam of copaiva. Oil of almonds, with as much camphor as can be dissolved in it, applied as a liniment rubbed on the region of the bladder and perinæum, and repeated every four hours, was used in this disease with success by Mr. Latham. Med. Comment. 1791, p. 213.

7. *Accumulatio alvina.* An accumulation of feces in the rectum, occasioned by the torpor, or insensibility, of that bowel. But as liquids pass by these accumulations, it differs from the constipation

patio alvi, which is owing to too great absorption of the alimentary canal.

Old milk, and especially when boiled, is liable to induce this kind of costiveness in some grown persons; which is probably owing to their not possessing sufficient gastric acid to curdle and digest it; for as both these processes require gastric acid, it follows, that a greater quantity of it is necessary, than in the digestion of other aliments, which do not previously require being curdled. This ill digested milk not sufficiently stimulating the rectum, remains till it becomes a too solid mass. On this account milk seldom agrees with those, who are subject to piles, by inducing costiveness and large stools.

M. M. Extract the hardened scybala by means of a marrow-spoon; or by a piece of wire, or of whale-bone bent into a bow, and introduced. Injections of oil. Castor oil, or oil of almonds, taken by the mouth. A large clyster of smoke of tobacco. Six grains of rhubarb taken every night for many months. Aloes. An endeavour to establish a habit of evacuation at a certain hour daily. See Class I. 1. 3. 5.

ORDO III.

Retrograde Sensitive Motions.

GENUS I.

Of Excretory Ducts.

THE retrograde action of the œsophagus in ruminating animals, when they bring up the food from their first stomach for the purpose of a second mastication of it, may probably be caused by agreeable sensation; similar to that which induces them to swallow it both before and after this second mastication; and then this retrograde action properly belongs to this place, and is erroneously put at the head of the order of irritative retrograde motions. Class I. 3. 1. 1.

SPECIES.

1. *Ureterum motus retrogressus.* When a stone has advanced into the ureter from the pelvis of the kidney, it is sometimes liable to be returned by the retrograde motion of that canal, and the patient obtains fallacious ease, till the stone is again pushed into the ureter.

2. *Urethræ motus retrogressus.* There have been instances of bougies being carried up the urethra
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into the bladder most probably by an inverted motion of this canal ; for which some have undergone an operation similar to that for the extraction of a stone. A case is related, in some medical publication, in which a catgut bougie was carried into the bladder, and, after remaining many weeks, was voided piece-meal in a semi-dissolved state. Another case is related of a French officer, who used a leaden bougie ; which at length found its way into the bladder, and was, by injecting crude mercury, amalgamated and voided.

In the same manner the infection, from a simple gonorrhœa, is probably carried further along the course of the urethra ; and small stones frequently descend some way into the urethra, and are again carried up into the bladder by the inverted action of this canal.

3. *Ductus choledochi motus retrogressus.* The concretions of bile, called gall-stones, frequently enter the bile-duct, and give violent pain for some hours ; and return again into the gall-bladder, by the retrograde action of this duct. May not oil be carried up this duct, when a gall-stone gives great pain, by its retrograde spasmodic action ? See Class I. 1. 3. 8.

M. M. Opium a grain and half.

ADDITIONS.

*Please to insert after line 9, p. 127. Art. Canities,
Class I. 2. 2. 11.*

I have lately also inspected a male cat; who is quite black all over, except those parts which appear to have been folded together in the uterus; all which are perfectly white. In both these animals the parts compressed together are so distinctly defined by their colour, that the difference of the curvature and situation of them in the uterus may be nicely discerned: the hinder feet of the cat lay in the arm-pits of the fore-legs, and are white; her fore-legs crossed over the hinder thighs, and left on them a white mark; but the fore-feet, at least the hind part of them, lay under the tail; whence the fore-feet are tipped with white. Where the foetus is less tender, I suppose, this compression in the uterus does not affect it; as dogs and cats are perpetually seen, which are totally black.

After line 16, p. 162, Class I. 2. 3. 12.

The following extract from a letter of Dr. Beddoes on hydrocephalus internus, is well worthy to be attended to.

After line 16, p. 164, Class I. 2. 3. 12.

This idea of inflammation preceding hydrocephalus was mentioned by Dr. Quin, and afterwards in a pamphlet of Dr. Paterfon, of Dublin.

END OF THE THIRD VOLUME.



